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CONOCOPHILLIPS COMPANY ("CONOCOPHILLIPS"),  
ON BEHALF OF PHILLIPS PETROLEUM COMPANY,  
TOSCO CORPORATION AND ASSETS OF 76 PRODUCTS COMPANY

RESPONSES TO JANUARY 18, 2008  
EPA FIRST REQUEST FOR INFORMATION  
PORTLAND HARBOR SUPERFUND SITE  
PORTLAND, OREGON

## ENVIRONMENTAL BASELINE ASSESSMENT

### RESPONSE TO QUESTION 9

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## Environmental Baseline Assessment Areas of Concern for the Portland Terminal

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
		Historical Information	The Portland terminal construction commenced circa 1907; Tank Farm No. 1 area, including Tank Farm No. 4, was developed circa 1910; between 1925 and pre-1936, the garage and shops in the Tank Farm No. 2 area plus the wharf and the warehouse were present; the 1939 aerial photographs show Tank Nos. 2915 and 2916 present in Tank Farm No. 2 area, the now off-site (to the east) office building and auto repair shop were also present; between 1939 and 1941 the boiler house was erected, the warehouse/garage/shop building in Tank Farm No. 2 was enlarged to the northeast; between 1948 and 1951 Tank Farm No. 3 was partially developed; between 1967 and 1969 Tank Nos. 4252 and 4255 were installed and Tank Farm No. 3 was reconfigured; the asphalt plant was added between 1967 and 1969; between 1973 and 1974 a new warehouse was constructed in the Tank Farm No. 1 area; between 1984 and 1986 the garage/shop building in Tank Farm No. 2 was modified (decreased in size); between 1986 and 1990 the asphalt plant was partially dismantled	M/B&A, 1997

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

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SUBSURF	Not Shown	Subsurface/ Groundwater	<p>On 1/21/79, 8,500 gallons of leaded regular gasoline was released from the filter check valve and contained in the separator system, 100 gallons may have entered the sanitary sewer; on 4/29/81, approximately 100 gallons of asphalt spilled from TK-4254 due to a tank leak; on 9/10/81, 310 gallons of RR-40 spilled from a tank overflow; on 6/22/82, 127 gallons of RRA-40 spilled from the underground flush tank due to an UST overflow; on 7/19/82, a product line cracked during annual pressure testing releasing 800 gallons; on 5/30/85, 370 gallons of ATF were released from TK-4388 due to a tank overflow; on 6/11/85, 3,000 gallons of fuel oil were released from a pipeline beneath Front Avenue due to a leak at a broken flange gasket, a 10-inch pipeline from TK-3579; on 3/14/86, approximately 1 barrel of asphalt spilled from TK-4318 due to a leak from the metering system; on 8/19/86, approximately 200 gallons of Oil (450 Neutral) leaked from a rupture of a heating vessel; on 9/20/86, two barrels of fuel oil spilled from the electric steam pumps behind loading rack in Tank Farm #1; on 4/15/88, 1,300 gallons of diesel leaked from the loading rack and was fully contained; on N/V/89, 50 gallons of fuel oil spilled from TK-36 when a drain overflowed; on 7/18/89, 300 gallons of Acryloid spilled from a tank car and was contained</p> <p>On 11/24/89, 3-5 barrels of fuel oil were spilled onto the ground from the steam pump; on 4/26/90, 72 gallons of unleaded were spilled from the loading rack due to an equipment malfunction, and was contained; on 3/8/93, 2,900 gallons of Lube oil were spilled from the Ramar 20/40 area due to an overflow and was contained</p> <p>Olympic pipeline spilled 25 gallons of diesel on 6/10/84, Unocal cleaned up spill</p>	<p>6/15/93 Preliminary Assessment Report by S&amp;E Analysis Corp.</p> <p>Table of reported spills at Unocal facility from 1/75 to 9/93, file TM-0608 Incident Report, 6/7/90</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
SUBSURF (continued)	Not Shown	Subsurface/ Groundwater	<p>5 gallons of diesel was lost from a line where a gasket blew 4" diesel line leak; 3.5 gallons of diesel contaminated soil were affected; A seasonal average of free phase liquid hydrocarbons (FPLH) volume in the ground at the Willbridge Site is 45,500 gallons</p> <p>Hydrocarbons in boring U4-A extended from the beginning of the saturated zone at approximately 15' and continued into the clay unit, where drilling was terminated at 31 feet; from 22 to 25.5', the boring contained significant amounts of FPLH in a medium to coarse sand; boring B-27A contained strong hydrocarbon odor throughout the saturated zone beginning at 15' and extending to the clay contact at 25.5'; the thickness of FPLH in the formation is estimated to be 0.16 feet</p> <p>In 1987, a total fluids pneumatic diaphragm pump, intake 31 feet below top of casing, recovered &lt; 1 gallon of FPLH; reactivated in 1990 and 1991, a total fluids pneumatic diaphragm pump recovered an unknown volume of product; after the well was in operation, the amount of FPLH in the surrounding wells began to increase; this corresponds to the drop in the amount of FPLH collected by the RES RES-New (a two pump liquid hydrocarbon recovery system) recovered 1,070 gallons of diesel in 1987; in 1988, 2,500 gallons of diesel were recovered; in 1989, 488 gallons of diesel were recovered; in 1990, 220 gallons of diesel were recovered; in 1991, 0.2 gallons of FPLH were recovered; total fluids pumping was performed in 1994; shut down in 8/1994; restarted FPLH recovery in 10/94 at approx. 10 gpm with extracted groundwater passing through an o/w separator; shallow tray air stripper, and activated carbon polishing before being discharged to the Willamette River under a NPDES permit</p>	<p>Incident Rpt, 10/9/92 January 1988, Progress Report, Riedel</p> <p>Willbridge Bulk Plant Facility Mobile Hydrocarbon Reassessment, Riedel, 12/30/90</p> <p>Willbridge Facility 1992 Final Report, Riedel, 12/12/93</p> <p>Draft Interim Action Work Plan, CH<sub>2</sub>M Hill, 11/94</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
SUBSURF (continued)	Not Shown	Subsurface/ Groundwater (continued)	<p>Concentrations of water samples collected from B-14 on 3/31/93 (B=540, T=27, E=380, X=110 ppb); on 6/20/94 (B=300, T=24, E=87, X=49 ppb); on 6/20/94 (PAHs = 14.83 ppb); from B-24, there was 0.35' of FPLH in 1993; on 6/20/94 (PAHs = 92.1 ppb); from B-27, located south of intersection along Front St., contained 1.45' FPLH in 1994; in 1991, 0.67' of FPLH was measured; from U-4 in Sept. 86, installed a pneumatic skimmer pump and recovered 1,600 gallons of product in three months; in 1992, approximately 28 gallons of product was collected; No. 2 diesel fuel accumulation was 9.51' in 1991, 4.3 feet in 1993; U-5 contained 0.65' of FPLH in 1991, 0.3' in 1994; Well RES-Old was installed as a 12-inch diameter recovery well in 1984; total fluids were pumped until Nov. 85 when it was shut down; well was restarted in March 1986; Sample collected from B-39 on 10/20/94 contained a mixture of No. 2 diesel and a small amount of motor oil/gear oil-type hydrocarbons; sample collected from B-24 contained No. 2 diesel-type hydrocarbons; sample from U-4 contained No. 2 diesel-type hydrocarbons; sample from U-5A contained a mixture of gasoline, kerosene/mineral spirits, and motor oil/gear oil type hydrocarbons</p> <p>FPLH thickness in U-5A was 0.32 ft, U-5 FPLH thickness was 0.01 ft, B-39 thickness was 0.72 ft., B-40 thickness was 0.15 ft., B-1 thickness was 0.02 ft B-38 thickness was 1.25 ft., B-40 thickness was 0.12 ft., on 6/24/96</p> <p>The presence of FPLH appears to be associated with the former and current alignments of the Doane Ave. stormwater outfall and possible Holbrook Slough; Wells B-1, B-4, and B-35 located in the dock area nearest the Old Doane Ave. storm drain alignment contained 0.15, 0.07, and 0.06 feet of FPLH, respectively (April measurement); Wells B-38, B-39, U-5, and RES-New appear to be connected to the New Doane Ave storm drain backfill material and contained 0.25, 0.08, 0.08, and 0.02 feet of FPLH, respectively</p>	<p>Letter to J. Comstock from T. Fisk, 10/27/94</p> <p>Letter to J. Kiernan, DEQ from CH<sub>2</sub>M Hill, 6/18/96</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
SUBSURF (continued)	Not Shown	Subsurface/ Groundwater (continued)	Volume of FPLH removed from May 1995 through August 1996 was 71.5 gallons; On 2/22/97, approximately 11,670 gallons of 92 octane gasoline was released while transferring from Tank 3408 to Tank 3411; as of 2/23/97, 1,600 gallons were recovered	CH <sub>2</sub> M Hill Rpt, 10/3/96 Letter to D'Zurilla from Schnieders, 2/23/97
		Recovery Well	Unocal has been recovering petroleum hydrocarbon impacted groundwater from two recovery wells RES-old and REW-new from the site since 1980; One or both wells were deactivated in 1994; RES-new was reactivated in 10/94 In Jan. 1993, a total of 180 gal FPLH were recovered from RES-New; in Feb. 1993, a total of 2.2 gal were recovered; in Mar. 1993, a total of 221.8 gal were recovered; in Apr. 1993, a total of 107.5 gal were recovered; in May 1993, a total of 131 gal were recovered; in June 1993, a total of 38.7 gal were recovered; in July 1993, a total of 104.4 gal were recovered; in Aug. 1993, a total of 7.5 gal were recovered; from RES-Old, 17.53 gal were recovered in March 1993; 10.4 gal were recovered in April 1993; 21.1 gal were recovered in May 1993; 8 gal were recovered in June 1993; and 6.5 gal were recovered in July, 1993; Well RES-new was installed in 1987; Well RES-new was reconstructed on 12/15/92; reactivated and maintained recovery operations until summer 1994	GeoEngineers Memo to DEQ, 12/13/94  Recovery Well Operational Logs
		Holbrook Recovery Trench	The river stage controls operation of the Holbrook Slough Recovery Trench, located along the shoreline near the old Doane Avenue outfall location; the trench is shut off as the river rises above approx. 5 to 6 ft; approximately 700 gallons of FPLH was recovered by the trench during May-October 1995	Letter to J. Kiernan from CH <sub>2</sub> M Hill, 5/5/96

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-#1	C-4 to D-5	Tank Farm #1 Includes Former Tanks 151, 712, 713, 714, 715, 716, 569, 1144, 1475, and "X"	<p>The following structures and features were evident in a circa 1910 photograph: Tank Nos. 31 and 141, several tanks in the lower lube cell, the former Cooper Shop, the former boiler house, the former foamite tanks and foamite building, the former warehouse/drum platform, the pump house, and the former garage; A pre-1925 ground level photograph confirmed the presence of the above-mentioned features; In addition, seven tanks were located west from Tank No. 31 (adjacent to the former garage structure); Former Tank No. 1475 and the railroad loading/unloading rack were evident by 1925; it was removed between 1948 and 1951.</p> <p>Former Tank Nos. 712, 714, and 716 were removed between 1948 and 1951; at the same time a truck loading rack was erected; From circa 1966 to 1975, discolored soil was observed in the vicinity of Tank Nos. 569, 713, 151, 715, and "X"; Tank Nos. 569, 151, and "X" were removed by 1980; a possible liquid release to the south/southeast from Tank No. 715 was observed in 1980; Tank Nos. 715 and 713 had been removed by 1981.</p> <p>On 1/21/79, leaded regular gasoline spill of 8,500 gallons occurred in tank yard; contained in separator system; 100 gallons may have entered sanitary sewer.</p> <p>On 3/21/85, 150 gallons of industrial fuel oil (bunker oil) spilled near shore in tank farm #1, near office building along railroad; oil spilled into sump area around faulty pump and was cleaned up.</p> <p>On 9/20/86, two barrels of fuel oil spilled from the electric steam pumps behind loading rack in Tank Farm #1.</p> <p>On 11/24/89, 3 to 5 barrels of fuel oil released to the ground; most of the product recovered and pumped to a slop tank; gravel was steam washed.</p> <p>Tanks TK-36, TK-1471, TK-2579, TK-2784, and yard piping contain some lead paint.</p> <p>Stained gravel, visible product from valves and piping along concrete berm between Tanks 2783 and 2784; staining on gravel below piping under valve; 500 gallon vapor recovery with knockout tank located in TF#1; standard tank bottom disposal practices; use of lead-based paint/primer and preparation practices.</p>	<p>M/B&amp;A, 1997</p> <p>Table of reported spills at Unocal facility from Jan 1975 to Sept. 1993, file TM-0608</p> <p>6/15/93 PA</p> <p>Incident report, 11/24/89</p> <p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-#1 (continued)	C-4 to D-5 (continued)	Tank Farm #1 (continued)	<p>A thick oily accumulation lined surfaces in the Final Box Sump of the process water system; several leaks from the Black Oil Manifold were observed, the product flowed over concrete to a grated drain; an active leak was observed at an Oil Heater Unit north from Tank No. 36, the oil flowed to a drain within the concrete containment; localized hydrocarbon releases to gravel were noted northwest and southeast from the north and south sides of Process Water Separator 003; an oil pan was located beneath a leaking hose, which was attached to Tank No. 2783, the surrounding soil and gravel were heavily stained by hydrocarbons</p> <p>Limited shallow subsurface investigation of Tank Farm No. 1 detected petroleum hydrocarbons in soil samples from 3 to 12 feet below grade; Light non-aqueous phase liquid (LNAPL) was observed in samples collected near Tanks 2784, 2783, and 2917 (GP-22, HA-24, and GP-26, respectively); Four of the five samples detecting the highest TPH-D concentrations were collected from 10 to 13 feet below grade in Tank Farm No. 1 (samples GP-19, GP-20, GP-22, and GP-26); Sample GP-20 (collected between UST-7 and Tank 31) and sample GP-23 (collected between Tank 2561 and Oil/Water Separator No. 3) detected concentrations of TPH-G over 1,000 mg/kg</p>	<p>M/B&amp;A Visit 1/21/97</p> <p>ThermoRetec, 1999</p>
TK-31	D-4	Tank 31 RFO 1,557,528 gallons	<p>Constructed in 1907 of single-wall, riveted (bottom and shell) steel resting on a gravel pad; located in TF #1, insulated</p> <p>50 gallons of black oil was spilled during water draw operations onto the gravel; the gravel was shoveled into open top barrels and new gravel was spread</p> <p>External inspection indicated number of leaks in the shell and around nozzles, a major leak is known to exist on the east side at an elevation of 18 feet; possible structural problems with the roof structural system; external corrosion above the insulation ring; parts of the tank are below grade</p> <p>Corrugated steel removed from bottom 1' of tank with insulation showing, staining on gravel from valves from pipes behind tank; standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Soil sample (GP-20) collected at 12 feet below grade on 9/18/97: TPH-D = 17,300 mg/kg, TPH-G = 1,390 mg/kg, TPH-HO = 1,260 mg/kg, total xylenes = 3.36 mg/kg</p>	<p>Incident Report, 2/8/89</p> <p>Field Inspection &amp; Structural Evaluation of Tank 31, 8/29/95</p> <p>RETEC Visit 1/6/97</p> <p>ThermoRetec, 1999</p>



## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-36	D-4	Tank 36 Slops 21,840 gallons	Constructed in 1907 of single-wall, riveted steel resting on a sand and gravel pad; located in TF #1, on NA/8/89, 50 gallons of fuel oil spilled from TK-36 when a drain overflowed Riveted shell; last painted 1988; base chime edge rusting; random impact damage with rusting substrate; breakdown starting to show at rivet seams External inspection indicated two roof areas with severe deterioration and four thin areas; the shell had a number of 1-inch diameter bulges of an unknown nature; coating failure was noted in isolated areas around the entire perimeter of the tank; the tar seal around the tank perimeter has significantly deteriorated and there are several cavities in the foundation; the area is poorly graded Sandblasted 9/86, water draw tank; slag present; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass Field Inspection & Structural Evaluation of Tank 36, 7/22/96  RETEC Visit 1/6/97
TK-141	C-4	Tank 141 IFO 1,821,246 gallons	Construction in 1908 of single-wall, riveted (bottom and shell) steel resting on a sand pad and is located in TF #1 External inspection indicated number of leaks in the shell (especially along the seams) and around nozzles; possible structural problems with the roof structural system; severe external corrosion above the insulation ring and around two inlet nozzles; a short dike wall constructed against the tank shell; thin roof plates exist; insulated Corrugated steel removed from bottom 1' of tank with insulation showing, staining on gravel from valves from pipes behind tank (Photograph No. 11) Soil sample (GP-25) collected at 12 feet below grade on 9/18/97: TPH-G = 18.7 mg/kg	Field Inspection & Structural Evaluation of Tank 141, 8/29/95  RETEC Visit 1/6/97; ThermoRetec, 1999  ThermoRetec, 1999
TK-1471	C-5	Tank 1471 GDL 10W Guardol 10 19,448 gallons	Constructed in 1921 of welded steel; located in TF #1, concrete dike secondary containment; minor staining on pump pad Riveted shell; last painted 1978; slight cracking and disbondment of topcoat; riveted seams starting to show coating breakdown with substrate rust; random impact damage visible on plate Water draw tank, valve staining on gravel and concrete pad (Photograph No. 13), scraped and painted 10-26-78; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97;  ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-2561	D-5	Tank 2561 Cutter Stock Fuel Oil Black Oil Product 1,668,775 gallons	<p>Constructed in 1929 of single-wall, riveted steel resting on a sand and gravel pad and is located in TF #1</p> <p>Riveted shell; last painted 1986; existing coatings appear in good shape; only visible problem is leaching rivets; approximately 12 leaks randomly distributed around the tank</p> <p>External inspection indicated number of leaks in the shell (at rivet heads and seams) and around nozzles; the roof structure has one corroded hole in it and two areas where the steel thickness is less than 0.1 inch; roof fitting number 1 is missing and there is evidence of product seepage; there are nine flat plates welded to the tank shell; portions of the shell and roof coating have failed; parts of the tank are below grade; the chime is heavily corroded with 1/16 inch thickness remain in some locations</p> <p>Water draw tank, sand blasted on 8/15/86; standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Photograph Nos. 4 and 5-staining on gravel near tank pad; staining beneath valve, seepage beneath tank; two soil samples (GP-23) collected at 7.5 feet and 10 feet below grade on 9/18/97: (7.5-foot sample) TPH-D = 7,300 mg/kg, TPH-G = 1,300 mg/kg; (10-foot sample) TPH-D = 6,810 mg/kg, TPH-G = 965 mg/kg</p>	<p>Coatings Survey Report, 1/5/96 by Vass</p> <p>Field Inspection &amp; Structural Evaluation of Tank 2561, 7/26/96</p> <p>RETEC Visit 1/6/97</p> <p>ThermoRetec, 1999</p>
TK-2579	C-5	Tank 2579 Guardol 10W 20,149 gallons	<p>Welded Steel tank constructed in 1929; concrete dike secondary containment</p> <p>Shell last painted in 1978; some cracking and disbondment of topcoats; random impact damage to flat plate; indication of lead paint</p> <p>Water draw tank; minor staining on pump pad; standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Photograph No. 14-staining beneath manway</p>	<p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97</p> <p>ThermoRetec, 1999</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-2669	D-5	Tank 2669 Marine Diesel Black Oil Product 475,356 gallons	Welded steel tank constructed in 1931, concrete dike secondary containment; wetted soil from a possible product flow was observed at the piping located north and contiguous with the tank in 1963 aerial photograph Riveted tank, regrade and recondition the entire tank perimeter; portions of the shell and the entire roof coating system have failed; tank shell is supported on a sand and gravel foundation pad Riveted shell; last painted in 1985; some edge rusting at rivet seams and base chime area observed Water draw tank, staining on gravel from two valves; pump pad near tank - observed staining on concrete (Photograph No. 6), on pumps, no cracks; standard water bottom release practices; potential releases to subsurface through tank bottom	7/23/94, Field Insp. & Structural Evaluation Report by AEC 1/5/96 Coatings Survey Report by Vass RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-2783	D-5	Tank 2783 Industrial Fuel Oil PS-300 Black Oil Product 984,486 gallons	<p>Welded steel tank constructed in 1937, concrete dike secondary containment; insulated; discolored soil was observed north and northeast of tank in 1940 aerial photograph and east of the tank in 1968 aerial photograph; wetted soil was noted east of the tank in 1969 aerial photograph</p> <p>Approximately 4 gallons of black oil leaked from valve onto the ground</p> <p>Flat bottom tank with welded bottom plates and riveted shell plates; the interior vertical riveted seams on the shell were visually examined, some of the seams appeared to have product wicking from between the plates; one external seam was exposed, the seam had apparently been leaking; the MFL identified topside (internal) corrosion in the form of general pitting; three small diameter pits approx. 0.1" deep were found; the tank foundation is below grade</p> <p>On 3/2/95, 20 gallon release of black oil decant onto containment pad, approx. 5 gallons spraying onto ground</p> <p>On 10/10/95, pressure relief system sprung a leak and 5 gallons sprayed out, 4 onto the pad and one onto the surrounding ground/gravel</p> <p>On 11/3/95, product spraying from the pump G1B next to TK-2783; Approximately 5,200 gallons were released, 20% went to the separators and 80% on to the soil</p> <p>Covered with corrugated steel, product staining along 10' of base, sandblast grit, staining on gravel from piping from tank; some buried and exposed wood saturated with product near tank; pump pad near tank saturated with product and the gravel around it was saturated; visible product from valves and piping along concrete berm between TK-2783 and TK-2784 and staining on gravel; some buried and exposed wood saturated with product near tank (Photograph Nos. 23, 24, 25, 26 and 27); pump pad near TK-2783 saturated with product and gravel around it was saturated; MW near TK-2783 (U-5A); standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Soil sample (HA-24) collected at 3 feet below grade on 9/13/97: TPH-D = 2,040 mg/kg, TPH-G = 473 mg/kg, TPH-HO = 1,330 mg/kg, ethylbenzene = 0.6 mg/kg, total xylenes = 0.832 mg/kg</p>	<p>M/B&amp;A, 1997</p> <p>11/9/92 Incident Report Field Inspection and 10/6/94 Structural Evaluation Report by AEC</p> <p>Incident Report, 3/2/95</p> <p>Incident Report, 10/10/95</p> <p>Incident Report, 11/3/95</p> <p>RETEC Visit 1/6/97; ThermoRetec, 1999</p> <p>ThermoRetec, 1999</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-2784	D-5	Tank 2784 Diesel No. 2 1,456,937 gallons	<p>Welded steel tank constructed in 1937, concrete dike secondary containment</p> <p>Discolored soil was noted northeast (1945) and north/contiguous to Tank No. 2784 (1961, 1971) and wetted soil was observed in 1977 (south/southwest from the tank)</p> <p>Riveted shell; last painted 1980; observed leaching rivets with most concentrated on bottom three rings; appears repairs were attempted unsuccessfully; most repairs continue to leak; most severe is in south side with product undercreep to surrounding coating with resulting blisters/cracking/disbondment and leaching of product</p> <p>Lap welded floor, butt and lap-riveted shell; few product side pit indications were detected on the tank bottom floor; the primary area with pits is located at the water draw line near the sump; an existing epoxy coat type liner has been applied over the corner weld and all vertical and horizontal shell (riveted) seams; light amounts of product at various locations along the shell to bottom area were seen, possibly surfacing from beneath the epoxy liner</p> <p>1' x 1' area of valve drip on gravel, water draw tank, scraped and painted 12/10/80, paint chips; observed staining on concrete and drains on pump pad next to tank; staining on concrete below diesel pump valve manifold slab next to tank 2784; visible free product from valves and piping along concrete berm between 2783 and 2784 and staining on gravel (Photograph Nos. 21 and 24); standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Soil sample (GP-22) collected at 13 feet below grade on 9/18/97: TPH-D = 11,600 mg/kg, TPH-G = 198 mg/kg, TPH-HO = 6,690 mg/kg</p>	<p>M/B&amp;A, 1997</p> <p>Coatings Survey Report, 1/5/96 by Vass; RETEC Visit 1/6/97</p> <p>Formal Internal/ External API Tank Inspection Report, June 1996 by CTI</p> <p>RETEC Visit 1/6/97; ThermoRetec, 1999</p> <p>ThermoRetec, 1999</p>
TK-2917	E-5	Tank 2917 450 Neutral 650,160 gallons	<p>Welded steel tank constructed in 1938, concrete dike secondary containment</p> <p>Last painted in 1979; checking and cracking of coating system visible throughout with pinpoint rust starting to show on soothsaid of tank; Observed severe breakdown on base chime</p> <p>Scraped and painted 7/11/79, paint chips, water draw to concrete box, staining on gravel under piping to pump (Photograph No. 31); standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Soil sample (GP-26) collected at 11 feet below grade on 9/18/97: TPH-D = 1,500 mg/kg, TPH-G = 731 mg/kg, TPH-HO = 1,450 mg/kg</p>	<p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97</p> <p>ThermoRetec, 1999</p>

Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-4369	E-4	Tank 4369 Drying 20,000 gallons	Insulated; welded steel tank constructed in 1979, concrete dike secondary containment Water draw tank, gravel around concrete pad stained and visible product observed; standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
TK-4441	E-4	Tank 4441 Additive	Staining on pad from pump; pump pad and gravel area 1'x 1' stained from piping; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
TF-#2	G-4	Tank Farm #2	Undeveloped in 1925; An office and auto repair shop was located southeast from Tank Farm No. 2; it was part of Unocal's property per Sanborn Maps, however the available terminal drawings and plans did not depict this area; the structures were razed by 1975; a Signal Oil Company Oil Warehouse was located southeast from Tank Farm No. 2 on the Sanborn Maps from circa 1941 to 1975 Product found leaking onto soils from an unused Diesel No. 2 line between TF#1 and TF#2 where the line enters Tank Farm #2 Tanks 2915 (top only), 2982, 3409, 3410, and 3411 contain some lead paint Contained within concrete wall berms; slag; standard tank bottom disposal practices; use of lead-based paint/primer and preparation practices Leaking flanges on the product pumps were evident, releases were observed throughout the concrete containment; a bucket that was full of product was located next to an empty bucket under a leaking pipe; stained rock and soil were observed around the bermed containment area; the valves at Tank No. 2983 were covered with oily material, the soil under the attached pipes was stained Limited shallow subsurface investigation of Tank Farm No. 2 detected petroleum hydrocarbons in soil samples from 2.8 to 11.5 feet below grade; Sample GP-3 collected near Tank 2915 detected a TPH-D concentration of 5,430 mg/kg and a TPH-HO concentration of 13,500 mg/kg; Soil gas samples collected near Tank 4259 and Tank 3409 detected concentrations of TPH-G, benzene, ethylbenzene, toluene, total xylenes, and MTBE at concentrations up to 26,800 mg/m <sup>3</sup> , 1,530 mg/m <sup>3</sup> , 52.5 mg/m <sup>3</sup> , 700 mg/m <sup>3</sup> , 298 mg/m <sup>3</sup> , and 2,930 mg/m <sup>3</sup> , respectively	M/B&A, 1997  Incident Report, 7/17/91  1/5/96 Coatings Sur. Rpt RETEC Visit 1/6/97  M/B&A Visit 1/21/97  ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-2915	F-5	Tank 2915 Unleaded Internal Float 3,556,140 gallons	Welded steel tank constructed in 1938, concrete dike secondary containment Last painted in 1978; topcoats starting to check and crack; small amount of topcoat disbondment with exposed primer; coatings exhibit heavy weathering Rutt welded cone roof tank; regrade and recondition the entire perimeter of the tank; portions of the shell and the entire roof coating system have failed; the tank has no grounding cables; the bottom shell course has a band of 1/64" to 1/32" deep pits scattered 360 degrees around the tank; there are isolated areas of coating failure; the tank shell is supported on a sand and gravel foundation pad; there is an asphalt seal which has deteriorated and pulled away from the chime; small excavation observed off site from tank in 1939 aerial photograph	Coatings Survey Report, 1/5/96 by Vass External API Inspection Report, 7/22/96 by AEC
EXCAV	E-5		Water draw tank, valve from tank to concrete box drain for water draw, sand blast chime area 1978, asphalt skirt; standard water bottom release practices; potential releases to subsurface through tank bottom Soil sample (GP-3) collected at 2.8 feet below grade on 9/17/97: TPH-D = 5,430 mg/kg, TPH-HO = 13,500 mg/kg; Soil gas sample (SG-1) collected at 12 feet below grade on 9/17/97: TPH-G = 3,010 mg/m <sup>3</sup> , benzene = 30.3 mg/m <sup>3</sup> , ethylbenzene = 17.5 mg/m <sup>3</sup> , toluene = 49.8 mg/m <sup>3</sup> , total xylenes = 6.34 mg/m <sup>3</sup> , MTBE = 29.9 mg/m <sup>3</sup>	RETEC Visit 1/6/97  ThermoRetec, 1999
TK-2916	G-5	Tank 2916 Diesel No. 2 1,716,960 gallons	Welded steel tank constructed in 1938, concrete dike secondary containment; Flat bottom tank, welded construction; the lower 1" to 2" of the shell exterior is heavily corroded and pitted; the tank foundation is below grade; the drainage around the tank is inadequate Last painted in 1981; widespread checking and cracking of topcoats with visible and severe rusting of base chime area and shell bottom Paint chips, painted 8/24/81, vault with underground piping, water draw valve into concrete box; standard water bottom release practices; potential releases to subsurface through tank bottom Photograph Nos. 32 and 33-staining beneath valve, paint chips on ground; Soil sample (GP-4) collected at 5 feet below grade on 9/17/97: TPH-D = 106 mg/kg, TPH-G = 30.5 mg/kg, benzene = 0.0078 mg/kg, ethylbenzene = 0.127 mg/kg, toluene = 0.201 mg/kg, total xylenes = 0.132 mg/kg; PID = 380 ppm @ 4.5 feet below grade	10/24/94 Field Inspection & Structural Evaluation Report by AEC Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97  ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-2982	F-4	Tank 2982 Heating Oil #1 478,800 gallons	<p>Welded steel tank, 1941, concrete dike secondary containment</p> <p>Tall flat bottom tank welded construction; the top shell course has some distortions due to the overfilling which took place in 1978; portions of the tank coating have failed; the tank foundation has eroded around some portions of the tank perimeter; in order to prevent further erosion, the tank base should be reconditioned; the chime is heavily corroded and pitted on the north side of the tank; the exterior corner weld is questionable</p> <p>The shell is severely corroded all around approx. 4" to 6" up from the bottom; Two small holes within 2" of the bottom were discovered and/or created when the bottom was being sandblasted; the most severe corrosion occurs between vertical weld seams; there are no grounding cables; there is a hole in the bottom approximately 1' from the shell near the vertical seam weld; the hole was discovered when the epoxy coating was being sandblasted</p> <p>Last painted 1979; severe checking and cracking of topcoats with rust bleed through on approx. 40%; lead indications</p> <p>Painted 6/13/78, paint chips, water draw, staining on valve and gravel (fill line) in a 3'x 3' area; concrete pump pad between TK-2982 and TK-2983 had staining on valves and pumps and concrete pad; standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Soil sample (HA-2) collected at 11.5 feet below grade on 9/17/97: TPH-D = 156 mg/kg, TPH-G = 169 mg/kg</p>	<p>Field Inspection &amp; Structural Evaluation Report, 10/26/94 by AEC</p> <p>Inspection &amp; Evaluation Report, 3/22/96 by AEC</p> <p>Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97</p> <p>ThermoRetec, 1999</p>
TK-2983	G-4	Tank 2983 150 Neutral 315,420 gallons	<p>Welded steel tank constructed in 1941, concrete dike secondary containment</p> <p>Last painted 1985</p> <p>Sandblasted 5/15/86; concrete pump pad between TK-2982 and TK-2983 had staining on valves and pumps and concrete pad; potential releases to subsurface through tank bottom</p> <p>The valves at Tank No. 2983 were covered with oily material, the soil under the attached pipes was stained (Photograph Nos. 39, 40, and 41)</p> <p>Soil sample (HA-8) collected at 3.5 feet below grade on 9/18/97: TPH-D = 56 mg/kg, TPH-G = 75.8 mg/kg, total xylenes = 0.138 mg/kg; PID = 284 ppm @ 3.5 feet below grade</p>	<p>Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97</p> <p>M/B&amp;A Visit 1/21/97; ThermoRetec, 1999 ThermoRetec, 1999</p>



## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-3407	H-4	Tank 3407 Unleaded Internal Float 3,384,150 gallons	Welded steel tank constructed in 1949, concrete dike secondary containment Floating roof tank; the coating on the shell has areas of deterioration; no tank grounding was located; the tank rests on a sand foundation; last painted 1986 Sandblasted 5/15/86, water draw to concrete box; standard water bottom release practices; potential releases to subsurface through tank bottom Soil gas sample (SG-6) collected at 12 feet below grade on 9/17/97: TPH-G = 4,050 mg/m <sup>3</sup> , benzene = 94 mg/m <sup>3</sup> , ethylbenzene = 8.38 mg/m <sup>3</sup> , toluene = 20.5 mg/m <sup>3</sup> , total xylenes = 17.4 mg/m <sup>3</sup> , MTBE = 166 mg/m <sup>3</sup>	AEC Inspection & Evaluation Report, 11/2/95 RETEC Visit 1/6/97  ThermoRetec, 1999
TK-3408	H-5	Tank 3408 Super Unleaded Internal Float 1,693,650 gallons	Welded steel tank constructed in 1949, concrete dike secondary containment Internal float roof and vapor dome tank; the coating on the shell has areas of deterioration; the coating is completely gone approx. 2" above the corner weld and the plate has surface corrosion; no tank grounding; the tank rests on a sand foundation; the chime projection past the toe of the corner weld was measured with the minimum dimension equal to 3/4", the minimum allowable by API is 1"; in 1991 the tank bottom pitting was repaired Last painted 1985, base chime coating damaged during internal welding; overall condition of shell remains good with the exception of three small areas of breakdown on west side of tank Sandblasted 7/11/85, water draw to concrete box; standard water bottom release practices; potential releases to subsurface through tank bottom	Inspection & Evaluation Report, 11/2/95 by AEC  Coatings Survey Report, 1/5/96 by Vass  RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-3409	G-5	Tank 3409 Ethanol Internal Float 1,150,800 gallons	Welded steel tank constructed in 1949, concrete dike secondary containment Internal floating roof tank; the coating on the shell has areas of deterioration; no tank grounding was located; tank rests on a sand foundation; the tank is at grade or 1" below grade around the perimeter Last painted 1981; widespread checking and cracking of topcoats with pinpoint rusting; edge rusting of base chime; lead indications Painted 8/24/81, paint chips, two water draws to stained concrete box, truck valve to underground; standard water bottom release practices; potential releases to subsurface through tank bottom Soil gas sample (SG-5) collected at 12 below grade on 9/17/97: TPH-G = 20,400 mg/m <sup>3</sup> , benzene = 440 mg/m <sup>3</sup> , ethylbenzene = 27.4 mg/m <sup>3</sup> , toluene = 246 mg/m <sup>3</sup> , total xylenes = 22.4 mg/m <sup>3</sup> , MTBE = 1,850 mg/m <sup>3</sup>	Inspection & Evaluation Report, 11/2/95 by AEC  Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97  ThermoRetec, 1999
TK-3410	G-4	Tank 3410 Av Gas Internal Float 302,190 gallons	Welded steel tank constructed in 1949, concrete dike secondary containment Last painting unknown; coating system adhesion is very poor with film thickness high; coating system exhibits blistering and cracking with rusting of substrate; lead indications Scraped and painted 8/24/81, paint chips (Photograph No. 34), water draw to concrete box; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass  RETEC Visit 1/6/97; ThermoRetec, 1999
TK-3411	G-4	Tank 3411 Super Unleaded Internal Float 302,190 gallons	Welded steel tank constructed in 1949, concrete dike secondary containment Last painting unknown; very poor condition of topcoats to old original lead primer; visible blistering and cracking with substrate rusting Paint chips, water draw to concrete box; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-3412	G-4	Tank 3412 Heating Oil #1? Ethanol? Internal Float 302,190 gallons	Welded steel tank constructed in 1948, concrete dike secondary containment The bottom plate has significant thinning from soil side pitting; several spots of paint failure and corrosion were observed on the tank shell, piping, handrails, stairs, and chime ring; the grades around the tank are such that water does not drain away from the tank; there is excessive corrosion and erosion in the tanks chime ring; leaking packing was noted on valves Water draw to concrete box, sandblasted 7/11/85; concrete pump pad between tanks 3412 and 3413 stained; standard water bottom release practices; potential releases to subsurface through tank bottom	API Inspection Report, 6/93 by E&H Services  RETEC Visit 1/6/97
TK-3413	G-4	Tank 3413 Unleaded Internal Float 302,190 gallons	Welded steel tank constructed in 1949, concrete dike secondary containment Concrete pump pad between TK-3412 and TK-3413 stained; standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
TK-4259	G-4	Tank 4259 Transmix Internal Float 230,160 gallons	Welded steel tank constructed in 1968, concrete dike secondary containment Last painted 1981; widespread pinpoint rusting visible throughout shell coating The shell coating has failed at numerous locations around the entire surface; the lowest 3 inches of the tank shell is lightly corroded and contains widely scattered 1/64" pits around the entire perimeter; the entire area had been covered by asphalt prior to inspection; no tank grounding cables were found; 7 locations around the tank perimeter, the bottom plate lap seams which project past the tank shell were either not welded or had significant deterioration; the tank shell is supported on a gravel and sand foundation pad; the perimeter of the tank should be regraded to allow for proper drainage Scraped 5/24/81, paint chips observed, water draw to concrete box, slag; standard water bottom release practices; potential releases to subsurface through tank bottom Soil gas sample (SG-7) collected at 12 feet below grade on 9/18/97: TPH-G = 26,800 mg/m <sup>3</sup> , benzene 1,530 mg/m <sup>3</sup> , ethylbenzene = 52.5 mg/m <sup>3</sup> , toluene = 700 mg/m <sup>3</sup> , total xylenes = 298 mg/m <sup>3</sup> , MTBE = 2,930 mg/m <sup>3</sup>	Coatings Sur Rpt, 1/5/96 Field Inspection & Structural Evaluation Report, 7/26/96 by AEC  RETEC Visit 1/6/97  ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-#3	C-7	Tank Farm #3	<p>Tanks 3414, 3415, 3416, 3417, 3739, 3744, and yard piping contain some lead paint</p> <p>Gravel saturated with product under piping between tanks 4252 and 4253</p> <p>some gravel staining under piping between Tanks 4254 and 4255; standard tank bottom disposal practices; use of lead-based paint/primer and preparation practices</p> <p>Localized hydrocarbon stains were noted on the concrete and in the dirt at the water draw and valve for Tank No. 3761; the gravel was hydrocarbon-stained in and around the Railroad Loading/Unloading Racks; rainbow sheens were evident on various paved surfaces; localized areas of asphalt-like material were observed in and around the pipes at Tank No. 4256; localized hydrocarbon stains were observed around the Oil Heater Unit and beneath the valve for Tank No. 3579; a layer (several inches thick) of hydrocarbon residues was located in a concrete-lined pit at the Black Oil Truck Loading Rack; more than 40 55-gallon drums were stored on bare soil in the southeast corner of the yard area</p> <p>Limited shallow subsurface investigation of Tank Farm No. 3 detected petroleum hydrocarbons in soil samples from 5.5 to 9 feet below grade; Samples GP-28 and HA-18 had highest concentrations of TPH-D and TPH-G</p>	<p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97</p> <p>M/B&amp;A Visit 1/21/97</p> <p>ThermoRerec, 1999</p>
DITCH	C-7 to C-8	Drainage Ditch	<p>A drainage ditch extended from the northwest to southeast along a pipeway and terminated in a depression southwest from Tank 3761 (1970, 1971, and 1972); soil along the pipeway appeared discolored (possibly just wet); liquid ponded in the depression; the erosional feature was stained in 1972, and the ground was wetted in 1974</p>	

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-3579	D-7	Tank 3579 Industrial Fuel Oil 3,385,200 gallons	Constructed of welded steel in 1950; concrete dike secondary containment Localized discolored soil was observed in the vicinity of the water draw on the south/southwest side of the tank in 1952 aerial photographs; wet flows were observed west from the tank in 1956 and 1957; wetted ground was observed west from the tank (1963); a depression with ponded liquid was at the east end of the containment area in 1964 There is an area of the shell ring where there are several thin thickness measurements; this could be a shell plate lamination or deep pits; water does not drain away from the tank; several spots of paint failure and corrosion were observed on the tank shell, piping, valves, heater, handrails, stairs, and chime ring A 6" diameter lap welded patch plate was installed over the soil side pit in bottom plate; the shell to bottom corner plate was repaired; a lap welded patch plate over the ripple in bottom plate was installed; weld repair pits in bottom was done; two coats of epoxy liner were applied to bottom and lower 18" of shell A total of 39 pits in the bottom plates were identified; a single soil side indication was located in bottom plate; tank sits on a sand foundation; insulated Corrugated steel tank; valve staining on gravel, water draw tank, sand blast grit observed on ground surface; concrete pad pump had visible product, no cracks in concrete, some gravel staining; standard water bottom release practices; potential releases to subsurface through tank bottom Photograph No. 72-tarry product from piping near bottom of tank	M/B&A, 1997  API Inspection Report, 8/93 by E&H Services  Inspection Report, 11/8/95 by AEC  Inspection & Evaluation Report, 8/23/95 by AEC RETEC Visit 1/6/97  ThermoRetec, 1999
TRENCH	D-8	Trench/Pit	A trench (possibly for tank bottom disposal) was located east from the tank in 1966; a pile of "clean" soil was also evident; dark to black staining was evident around the trench, especially to the southeast (general area of future Tank No. 4318)	M/B&A, 1997
DEPRESS	C-7	Depression/Pit	Another depression/pit was noted southwest from the tank just inside an earthen containment dike; both pits were filled by the 1967 photograph date	M/B&A, 1997

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-3761	C-9	Tank 3761 Diesel No. 2 3,385,200 gal.	Constructed in 1954 of welded steel; concrete dike secondary containment 20 gallon diesel tank leak on 1/25/83	Table of Reported Spills at Unocal from 1/75- 9/93 file TM-0608
DITCH	C-7 to C-8	Drainage Ditch	<p>Ponded liquid was observed generally south/southeast from the tank in 1969, 1970, and 1972; A drainage ditch extended from the northwest to southeast along a pipeway and terminated in a depression southwest from Tank 3761 (1970, 1971, and 1972); soil along the pipeway appeared discolored (possibly just wet); liquid ponded in the depression; the erosional feature was stained in 1972</p> <p>Flat bottom tank, welded construction; topside (internal) corrosion was identified in the form of general pitting; three small diameter holes were found; the tank sits on grade; the asphalt paving around the tank is higher than the tank bottom</p> <p>Installed new tank bottom with secondary containment lining and leak detection</p> <p>Cleaned and painted interior of new bottom and lower two feet of shell and columns</p> <p>Last painted bottom course 1995, remainder of shell 1983; shell contains approximately ten coats of paint; the top five coats are severely checked and cracked and easily peels from the first five coats</p> <p>Water draw to concrete box, cracked asphalt skirt, sandblasted 1983, staining from valve on skirt, crack, and gravel, painted 7/28/95, paint chips and sandblast grit observed on gravel; double bottom tank; standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Localized hydrocarbon stains were noted on the concrete and in the dirt at the water draw and valve for Tank No. 3761 (Photograph Nos. 63 and 64)</p> <p>Soil sample (GP-28) collected at 5.5 feet below grade on 9/19/97: TPH-D = 6,400 mg/kg, TPH-G = 258 mg/kg</p>	<p>M/B&amp;A, 1997</p> <p>Field Inspection &amp; Structural Evaluation Report, 10/7/94 by AEC</p> <p>Field Insp Rpt, 6/14/95</p> <p>Coat. Insp. Rpt, 7/31/95</p> <p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97</p> <p>M/B&amp;A Visit 1/21/97;</p> <p>ThermoRetec, 1999</p> <p>ThermoRetec, 1999</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-4252	C-7	Tank 4252 Out of Service 420,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment; Flat bottom welded tank; several spots of paint failure and corrosion were observed on the tank shell, wind girder, piping, handrails, stairs, and chime ring; water does not drain way from the tank; sections of the tank bottom have excessive soil-side pitting; insulated Diesel No. 2 release of 4 gallons, three to drip pans and absorbent pads, one to the ground surface from BP circulation line to tanks TK-4252 and TK-4253 Corrugated steel tank, asphalt skirt, staining on asphalt, sand blast grit (Photograph Nos. 69, 70 and 71); Earthen berms by tank TK-4252 had hardened product on berms and flowing towards the stormwater drain; standard water bottom release practices; potential releases to subsurface through tank bottom Soil sample (GP-32) collected at 6 feet below grade on 9/19/97: TPH-D = 930 mg/kg, TPH-G = 43.3 mg/kg, TPH-HO = 86 mg/kg	API Inspection Report, July 1993 by E&H Services  Incident Report, 11/9/94  RETEC Visit 1/6/97; ThermoRetec, 1999  ThermoRetec, 1999
TK-4253	C-7	Tank 4253 Out of Service 420,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment; The bottom has excessive soil side pitting which combined with product side corrosion caused the actual thickness of numerous areas of the tank bottom to be less than the minimum allowed by API, a new bottom is required; several spots of paint failure and corrosion were observed on the tank shell, flanges, and chime ring; water does not drain away from the tank; one hole was identified in the floor; severe plate thinning; insulated Diesel No. 2 release of 4 gallons, three to drip pans and absorbent pads, one to the ground surface from BP circulation line to tanks TK-4252 and TK-4253 Corrugated steel tank, asphalt skirt, staining on asphalt, sand blast grit (Photograph Nos. 69, 70 and 71); Standard water bottom release practices; potential releases to subsurface through tank bottom	API Inspection Report, July 93 by E&H  Incident Report, 11/9/94  RETEC Visit 1/6/97; ThermoRetec, 1999
DEPRESS	C-7	Depression/Pit	A depression/pit was noted north of the tank just inside an earthen containment dike; filled by the 1967 photograph date	M/B&A, 1997
MOUND	C-7	Black Mound	A mound of black material was observed in the general location of this tank (pre-development)	M/B&A, 1997

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-4254	C-8	Tank 4254 Out of Service 420,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment; insulated On 4/29/81, asphalt release of 100 gallons from a tank leak Corrugated steel tank, asphalt skirt, staining on asphalt, sand blast grit, water draw (Photograph No. 66); standard water bottom release practices; potential releases to subsurface through tank bottom	Rpt Spills (1/75- 9/93) RETEC Visit 1/6/97; ThermoRetec, 1999
TK-4255	C-8	Tank 4255 Out of Service 420,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment; insulated Corrugated steel tank, asphalt skirt, staining on asphalt, sand blast grit (Photograph No. 65), gravel stained area 6'x 6'; standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
TK-4256	C-8	Tank 4256 Out of Service 420,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment; insulated Corrugated steel tank, water draw, gravel stained from valve, piping near tank, gravel saturated with product (Photograph Nos. 67 and 68); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
TK-4257	C-8	Tank 4257 Out of Service 420,000 gallons	Constructed in 1968 of welded steel concrete dike secondary containment Last date painted 1979; shell coatings contain widespread coating breakdown with rust bleed through Scraped and painted 7/11/79, water draw tank; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97
TK-4281	Not Shown	Tank 4281 MP ATF 20,000 gallons	Welded steel tank constructed in 1969, concrete dike secondary containment Last painting unknown; topcoats heavily cracked and checked Water draw, on concrete pad, paint chips observed; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97



Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TK-4306	D-7	Tank 4306 150 Neutral 222,600 gallons	Constructed in 1971 of welded steel; concrete dike secondary containment 1971; flat bottom welded construction; the lower 1" to 2" of the shell exterior is heavily corroded and pitted; the deepest pit is 1/16"; inadequate site drainage; the tank sits on grade Discoloration in the general area of Tank No. 4306 was noted in the 1972 aerial photograph Last date painted 1986; severe coating breakdown at base of tank with disbonded coating and exposed substrate; small areas of spot rusting Staining below water draw valve on concrete and gravel, paint chips observed on gravel (Photograph No. 73), sandblasted 9/86; standard water bottom release practices; potential releases to subsurface through tank bottom	Field Inspection & Structural Evaluation, 10/26/94 by AEC  M/B&A, 1997  Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97; ThermoRetec, 1999
TK-4318	D-8	Tank 4318 Industrial Fuel Oil 1,504,000 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment; insulated; on 3/14/86, approximately 1 barrel of asphalt spilled from TK-4318 due to a leak from the metering system Corrugated steel tank, visibly hardened product on asphalt skirt and gravel, water draw tank, sandblast grit (Photograph No. 62); standard water bottom release practices; potential releases to subsurface through tank bottom	6/15/93 PA  RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-1A	C-5	Tank Farm-1A Containment Area	Subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	C-5	Tank 2713 UNIX AW 46 119,868 gallons	Welded steel tank constructed in 1937, concrete dike secondary containment Last painted unknown; some slight topcoat peeling and cracking at bottom course weld seams; remainder exhibits heavy weathering Spills on skirt and gravel in a 3' x 20' area (Photograph Nos. 19 and 20), paint chips; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass  RETEC Visit 1/6/97; ThermoRetec, 1999
	C-5	Tank 2714 Guardol 15/40 119,868 gallons	Welded steel tank constructed in 1937, concrete dike secondary containment Last painted 1979; observed slight checking and cracking of topcoat Asphalt skirt, drip from valve onto skirt and gravel in a 3' x 5' area, another two valve stains on skirt and gravel in a 1' x 3' area (Photograph No. 18), paint chips; potential releases to subsurface through tank bottom Soil sample (GP-21) collected at 11 feet below grade on 9/18/97; TPH-D = 69 mg/kg, TPH-G = 5.78 mg/kg, TPH-HO = 105 mg/kg	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97; ThermoRetec, 1999  ThermoRetec, 1999
	C-5	Tank 3639 Guardol 30 132,300 gallons	Welded steel tank constructed in 1951, concrete dike secondary containment Last painted 1979; some base chime edge rusting; observed slight checking and cracking of topcoats; coating weathered dull and streaked Asphalt skirt around tank; 1' diameter valve drip, sandblasted 11/10/79, valve from tank to product line covered with product and onto ground covering a 5' x 5' area (Photograph Nos. 15-17); potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass  RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-2A	G-4	Tank Farm-2A Containment Area	Subsurface impacted by surrounding tank farm events and significant product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	G-4	Tank 3623 R224 Gas Slops 20,000 gallons	Welded steel tank constructed in 1950, concrete dike secondary containment Last painted unknown; observed some rust scale at base chime underside; shell coating exhibits random small and widely scattered areas of blisters with rust underside Hardened tar-like substance along outside of tank on concrete pad and ground, water draw tank to concrete box, paint chips; additive injection pumps on concrete tank near tank is very stained; process drain between TK-4327, TK-4223, and TK-3623 pump on concrete pad, much staining, water draw; additive injection pump on concrete pad near TK-3623 - very stained (Photograph Nos. 35-37); standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass  RETEC Visit 1/6/97; ThermoRetec, 1999
	G-4	Tank 4223 Slop 20,000 gallons	Welded steel tank constructed in 1968, concrete dike secondary containment Last painted unknown; shell coating contain widespread coating breakdown with blistering, disbondment, and rust bleed through Water draw tank; process drain between TK-4327, TK-4223, & TK-3623 pump on concrete pad, much staining, water draw; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97
	G-4	Tank 4327 R224W Gas Slops 10,000 gallons	Welded steel tank constructed in 1974, concrete dike secondary containment Last painted unknown; base chime exhibits edge rusting; slight topcoat breakdown on horizontal weld seams; peeling paint Paint chips observed on gravel, solid tar-like substance on concrete pad around tank bottom (Photograph No. 38), drips to gravel; process drain between TK-4327, TK-4223, & TK-3623 pump on concrete pad, much staining, water draw; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3A	D-7, D-8	Tank Farm-3A Containment Area	Subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	D-7	Tank F-103 Exxon White Oil 30,000 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment Coatings weathered, dull and streaked; minor impact damage with spot rusting Water draw tank on concrete pad, sandblasted 7/10/82; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Sur Rpt, 1/5/96 RETEC Visit 1/6/97
	D-7	Tank F-104 Exxon White Oil Evergreen 100N 21,700 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment Coatings weathered, dull and streaked; minor impact damage with spot rusting Concrete pad, sandblast grit, sandblasted 8/15/86; potential releases to subsurface through tank bottom	Coatings Sur Rpt, 1/5/96 RETEC Visit 1/6/97
	D-7	Tank 4320 PS300 super motor oil 10W/ 30, prev. emulsified Asphalt 42,000 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment; insulated; pipe associated with tanks TK-4320 to TK-4323 leaked approx. 5 gallons of black oil (PS300) onto the soil; ½ drum of contaminated soil was removed Tank sits on a grid of beams resting on grade; there is some minor mill scale visible Corrugated steel tank on concrete pad, sandblast grit, gravel stained under valve (Photograph No. 59); potential releases to subsurface through tank bottom	Incident Report, 8/30/95  FI&SE Rpt., 12/29/94 RETEC Visit 1/6/97; ThermoRetec, 1999
	D-7	Tank 4321 PS300, Uniguide 46, prev emulsified asphalt 42,000 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment; Insulated; flat bottom tank, tank sits on a grid of beams resting on grade; there is some minor mill scale visible Corrugated steel tank on concrete pad, sandblast grit; potential releases to subsurface through tank bottom	Field Inspection & Structural Evaluation Report, 12/29/94 by AEC RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3A (continued)	D-8	Tank 4322 PS300, tractor fluid, previously emulsified asphalt 42,000 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment; insulated; flat bottom tank, tank sits on a grid of beams resting on grade; there is some minor mill scale visible Corrugated steel tank on concrete pad, sandblast grit; potential releases to subsurface through tank bottom Photograph No. 60—staining beneath valves	Field Inspection & Structural Evaluation Report, 12/29/94 by AEC RETEC Visit 1/6/97 ThermoRetec, 1999
	D-8	Tank 4323 PS300, Super ATF, previously emulsified asphalt 42,000 gallons	Constructed in 1973 of welded steel; concrete dike secondary containment; insulated; flat bottom tank; tank sits on a grid of beams resting on grade; there is some minor mill scale visible; the settlement pattern is not in conformance with API levelness Corrugated steel tank on concrete pad, sandblast grit; potential releases to subsurface through tank bottom	Field Inspection & Structural Evaluation Report, 12/29/94 by AEC RETEC Visit 1/6/97
TF-3B	D-6, D-7	Tank Farm-3B Containment Area	Subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	D-6	Tank 3414 190 Bright Stock 222,180 gallons	Constructed in 1949 of welded steel; concrete dike secondary containment Tall flat bottom, welded construction tank; two areas of underside (external) corrosion beyond the threshold settings were located; the tank sits on grade Last painted 1986; observed some tank settlement on base chime below asphalt; shell coating weathered, dull, and streaked; lead indication Sand blasted 9/86, water draw staining on gravel (Photograph No. 56); standard water bottom release practices; potential releases to subsurface through tank bottom	11/21/94 Field Inspection & Structural Evaluation by AEC Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97 ThermoRetec, 1999

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## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3B (continued)	D-7	Tank 3416 150 Neutral 222,180 gallons	Constructed in 1949 of welded steel; concrete dike secondary containment Wetted/stained soil was observed in the 1970 aerial photograph generally east/southeast from Tank Nos. 3416 and 3417 Repairs performed during 8/94: re-welding of interior corner weld, 360 degrees around; removing a section of a sketch plate containing an obsolete nozzle (bull plug); slotting a new section of floor plate to replace the section above; welding a 3' 6" x 3' 6" bearing plate under roof support column; Observed small hole made by an existing weld defect; tank floor has puddle welding of minor pitting occurred and some repair of minor weld defects on the internal piping Last painted 1978; observed severe breakdown at base chime; shell coating weathered, dull, and streaked; lead indication Scraped and painted 8/17/78; water draw staining on gravel (Photograph No. 55); standard water bottom release practices; potential releases to subsurface through tank bottom	M/B&A, 1997  AST Repair Monitoring Report, 8/11/94, AEC  Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97; ThermoRetec, 1999
	D-7	Tank 3417 90 Neutral 222,180 gallons	Constructed in 1949 of welded steel; concrete dike secondary containment Discolored soil was observed east/southeast from Tank No. 3417 in the 1969 aerial photograph; wetted/stained soil was observed in the 1970 aerial photograph generally east/southeast from Tank Nos. 3416 and 3417 Last painted 1986; observed some tank settlement - base chime below asphalt and partially covered with earth; shell coating is weathered, dull, and streaked; lead indication Valves and gravel below valves stained (Photograph No. 54), water draw tank, paint chips observed on ground surface, sand blasted 9/86; standard water bottom release practices; potential releases to subsurface through tank bottom	M/B&A, 1997  Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3B (continued)	D-6	Tank 3739 190 Bright Stock 226,800 gallons	<p>Constructed in 1954; flat bottom tank, welded steel construction; concrete dike secondary containment; the lower 1" to 2" of the shell exterior is corroded and pitted; one borderline area of underside (external) corrosion was located; a ¼" lap welded patch plate was found on the interior which does not conform to API standard weld spacing requirements</p> <p>Localized wetted soil was evident west from the tank extending to the pipeway (1956)</p> <p>Last painted 1978; observed some tank settlement - base chime below asphalt; severe breakdown at base of tank - coatings peeling with exposed rusted substrate; shell coating weathering with slight checking and cracking of topcoats; lead indication</p> <p>Scraped and painted 8/17/78, water draw tank; some staining on gravel between tanks 3739 and 3749; standard water bottom release practices; potential releases to subsurface through tank bottom</p>	<p>Field Inspection &amp; Structural Evaluation Report, 11/21/94 by AEC</p> <p>M/B&amp;A, 1997</p> <p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97</p>



## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3B (continued)	D-7	Tank 3740 Lube Oil 450 Neutral 302,400 gallons	<p>Constructed in 1954 of welded steel; concrete dike secondary containment</p> <p>Discolored ground under the pipeway and southwest from Tank No. 3740 was observed in the 1954, 1964, 1975, and 8/4/90 aerial photograph</p> <p>Repairs performed during 8/94 included removing a section of a sketch plate containing an obsolete nozzle; slotting a new section of floor plate to replace section mentioned above; welding a 3' 6" x 3' 6" bearing plate under roof support column; repairing small areas of weld defects in the corner weld and several shell attachments</p> <p>Flat bottom tank; approximately 3/32" deep pits were found on the interior south side of the shell near the bottom; approximately 3/32" deep pits were found on the bottom plate near the water draw; minor pits were found on the inside shell-to-bottom weld around the entire perimeter; the tank sits on grade</p> <p>Last painted in 1978; observed some tank settlement on base chime below asphalt; base chime exhibits coating breakdown; severe checking and cracking with some rust bleed through; coating is weathered, dull, streaked</p> <p>Sand blasted 9/86, scraped and painted 1978, water draw tank, staining on concrete and gravel (Photograph Nos. 57 and 58); some staining on gravel between tanks TK-3739 and TK-3749; standard water bottom release practices; potential releases to subsurface through tank bottom</p> <p>Soil sample (GP-33) collected at 6 feet below grade on 9/19/97: TPH-D = 930 mg/kg, TPH-G = 43.3 mg/kg, TPH-HO = 86 mg/kg</p>	<p>M/B&amp;A, 1997</p> <p>AST Repair Monitoring Report, 8/11/94, AEC</p> <p>Field Inspection &amp; Structural Evaluation Report, 8/23/94 by AEC</p> <p>Coatings Survey Report, 1/5/96 by Vass</p> <p>RETEC Visit 1/6/97; ThermoRetec, 1999</p> <p>ThermoRetec, 1999</p>
TF-3C	D-6	Tank Farm-3C Containment Area	Subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	D-6	Tank 4244 Golden Bear 22 100 Oil 20,000 gallons	<p>Constructed in 1968 of welded steel; concrete dike secondary containment</p> <p>On concrete pad, water draw, spot blasted on 5/17/86; standard water bottom release practices; potential releases to subsurface through tank bottom</p>	RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3C (continued)	D-6	Tank 4245 Drying Tank 20,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment; insulated Water draw to concrete box, stained around outside of concrete box on gravel, staining on concrete, stain on gravel under valve (Photograph Nos. 47-49); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	D-6	Tank 4258 Drying Tank 20,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment Insulated; observed severe corrosion (rust scale) at and under base chime area; tank contains bare rusted pipe, valves, and outlets between tank and insulation jacket Corrugated steel tank on concrete; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass  RETEC Visit 1/6/97
	D-6	Tank 4266 Lube Oil Flush 20,000 gallons	Constructed in 1968 of welded steel; concrete dike secondary containment Last painted 1986; slight edge rusting at base chime and minor pinpoint rusting on the roof lip underside Spot blasted 5/17/86, water draw on concrete pad; standard water bottom release practices; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97
	D-7	Tank 4302 Drying Tank 20,000 gallons	Constructed in 1971 of welded steel; concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on gravel around concrete, water draw (Photograph Nos. 50 and 51); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	D-7	Tank 4303 Drying Tank 20,000 gallons	Constructed in 1971 of welded steel; concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on gravel around concrete, water draw (Photograph No. 52); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-3C (continued)	D-7	Tank 4305 190 Bright Stock 10,000 gallons	Constructed in 1971 of welded steel; concrete dike secondary containment; insulated Base chime area is exposed and does contain severe corrosion below insulation jacket; bare steel pipe and valves attached to the tank Corrugated steel tank on concrete pad; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97
TF-F	B-6	Tank Farm-3C Containment Area	A 1994 aerial photograph depicted a flow signature from the tank farm which extended to the northeast; subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	M/B&A, 1997
	B-6	Tank 4336 Utility 20,000 gallons	Welded steel tank located on concrete pad, constructed in 1973, concrete dike secondary containment; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-6	Tank 4337 Utility 20,000 gallons	Welded steel tank located on concrete pad, constructed in 1973, concrete dike secondary containment; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-6	Tank 4335 Unax AW 32WR 20,000 gallons	Welded steel tank located on concrete pad constructed in 1973, concrete dike secondary containment; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-7	Tank 4436 Unax AW 68 20,000 gallons	Welded steel tank constructed in 1990, concrete dike secondary containment On concrete pad, concrete dike secondary containment; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-7	Tank 4437 Unax AW 68 20,000 gallons	Welded steel tank, 1990, concrete dike secondary containment On 6/8/93, 0.5 gallon release of product to ground On concrete pad, concrete dike secondary containment; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97 Acc./Inc. Report, 6/7/93 RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
TF-F (continued)	B-6	Tank F-10 Utility 6,384 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; insulated Corrugated steel on concrete footings; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-6	Tank F-11 Utility 6,384 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment Corrugated steel on concrete footings, insulated, staining below tank (Photograph No. 74); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank F-12 Utility 6,384 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment Corrugated steel on concrete footings, insulated, staining below tank; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
LUBE-UP	B-6	Upper Lube Cell	Concrete pump area had staining on concrete, no visible cracks; piping in vault between tanks TK-4191 and TK-4281 and between tanks TK-4281 and TK-4332 had staining and sheen on surface; historical aerial photographs indicated three former storage tanks were located north of this unit; subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	B-6	Tank 3741 Ramar 20/40 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment Water draw tank, paint chips observed on gravel, product on gravel and on concrete pad (Photograph No. 94); on 3/8/93, 2,900 gallons of Lube oil were possibly spilled from this Ramar 20/40 area due to an overflow; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 3742 LS80/90 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; Insulated Corrugated steel tank on concrete pad, hardened product on gravel, staining on concrete (Photograph No. 95), paint chips observed on gravel; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-UP (continued)	B-6	Tank 3743 Hydraulic Tractor Fluid 20,000 gallons	Welded steel tank, constructed in 1954, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, hardened product on gravel, staining on concrete (Photograph No. 96), paint chips observed on gravel; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 3744 Golden Bear 100 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment Last date painted unknown; base chime exhibits coating breakdown; lead indication Tank located on concrete pad, paint chips observed on gravel, hardened product on gravel and concrete pad (Photograph No. 91), staining; potential releases to subsurface through tank bottom	Coatings Sur Rpt, 1/5/96 RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 3745 Acryloid 954 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; insulated 300 gallons of additive released due to tank overfill; Water draw, corrugated steel tank on concrete pad, staining on gravel (Photograph No. 92); standard water bottom release practices; potential releases to subsurface through tank bottom	Incident Report, 7/18/89 RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 3746 Paratorq 4509 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, water draw, staining on concrete pad and staining on gravel (Photograph No. 93); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 3747 Lubrizol 7916A HiTec 436 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, water draw tank, hardened product on gravel (Photograph No. 88); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-UP (continued)	B-6	Tank 3757 HiTec 7330 Lub 9800F 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; insulated Corrugated steel water draw tank on concrete pad; standard water bottom release practices; potential releases to subsurface through tank bottom Photograph No. 89—hardened product on gravel	RETEC Visit 1/6/97 ThermoRetec, 1999
	B-6	Tank 3760 Golden Bear 100 20,000 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; insulated Corrugated steel water draw tank on concrete pad, paint chips observed on gravel, stain on gravel (Photograph No. 90); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4191 Lubrizol 4954W 20,000 gallons	Welded steel tank constructed in 1964, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, water draw with staining on gravel below valve; standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-6	Tank 4192 TLA 555 HiTec 5755 20,000 gallons	Welded steel tank constructed in 1964, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, water draw, staining on pad and gravel, paint chips observed on gravel (Photograph No. 86); standard water bottom release practices; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4241 Unax AW 32 20,000 gallons	Welded steel tank constructed in 1968, concrete dike secondary containment Last painting unknown; topcoats exhibit checking, cracking, and peeling Paint chips observed on gravel (Photograph No. 85), concrete pad, staining on gravel below valve; potential releases to subsurface through tank bottom	Coatings Sur Rpt, 1/5/96 RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-UP (continued)	B-6	Tank 4242 Unax AW 32 20,000 gallons	Welded steel tank constructed in 1968, concrete dike secondary containment Last painting unknown; topcoats exhibit checking, cracking, and peeling Tank on concrete pad, paint chips observed on gravel (Photograph No. 84), staining on pad and gravel; potential releases to subsurface through tank bottom	Coatings Sur Rpt, 1/5/96 RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4243 PM 220 20,000 gallons	Welded steel tank constructed in 1968, concrete dike secondary containment; insulated Staining on concrete pad and gravel (Photograph No. 83), paint chips observed; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4332 MP ATF 20,000 gallons	Welded steel tank constructed in 1973, concrete dike secondary containment Last painted unknown; shell coating weathered, dull, and streaked Paint chips observed on gravel (Photograph No. 82), tank on concrete pad; potential releases to subsurface through tank bottom	Coatings Sur Rpt, 1/5/96 RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4333 Hydraulic AW 46 20,000 gallons	Welded steel tank constructed in 1973, concrete dike secondary containment Last painted unknown; some peeling topcoat visible Tank on concrete pad, stained pad and gravel (Photograph No. 80), paint chips; potential releases to subsurface through tank bottom	Coatings Sur Rpt 1/5/96 RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4334 Hydraulic AW 32/68 20,000 gallons	Welded steel tank constructed in 1973, concrete dike secondary containment Last painted unknown; finish coat weathered, dull and streaked with scattered impact damage Tank on concrete pad, stained pad and gravel (Photograph No. 81); potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97; ThermoRetec, 1999

Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-LOW	B-5, B-6	Lower Lube Cell	Pump and piping area stained concrete, some small cracks; subsurface impacted by surrounding tank farm events and product spillage on ground surface within this tank farm	RETEC Visit 1/6/97
	B-6	Tank 4300 RAMAR 20/40 30,000 gallons	Welded steel tank constructed in 1969, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, paint chips observed on gravel, staining on gravel and concrete pad (Photograph No. 97); on 3/8/93, 2,900 gallons of lube oil were possibly spilled from this Ramar 20/40 area due to an overflow; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-6	Tank 4331 OLOA 2990 30,000 gallons	Insulated; welded steel tank constructed in 1973, concrete dike secondary containment Corrugated steel tank on concrete pad, paint chips observed on gravel, stained pad and gravel (Photograph No. 98); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-5	Tank 4388 Utility 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment; insulated; on 5/30/85, 370 gallons of ATF were released from TK-4388 due to a tank overflow Corrugated steel tank on concrete pad, staining on concrete; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; 6/15/93 PA
	B-5	Tank 4389 Uniguide 46 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on concrete (Photograph No. 99); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-5	Tank 4390 Bare Chain 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment; insulated Corrugated steel tank on concrete pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97



## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-LOW (continued)	B-5	Tank 4391 Utility 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4392 Utility 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment Release of 268 gallons of super ATF due to tank overflow 200 gallons of paratac released from camlock fitting onto ground; oil recovered and put into slop tanks On concrete pad, staining on pad; potential releases to subsurface through tank bottom	Acc./Inc. Report, 5/7/93 Incident Report, 6/21/91 RETEC Visit 1/6/97
	B-5	Tank 4393 Utility 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment On concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4394 HP 20W/ 40 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment On concrete pad, staining on pad (Photograph No. 100); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-5	Tank 4395 Utility 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment On concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4397 LS85/140 15,000 gallons	Welded steel tank, constructed in 1985; concrete dike secondary containment; insulated On concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4398 Utility 15,000 gallons	Welded steel tank, constructed in 1985; concrete dike secondary containment; insulated On concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-LOW (continued)	B-5	Tank 4399 Utility 15,000 gallons	Welded steel tank, constructed in 1985; concrete dike secondary containment; insulated On concrete pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4400 Guardol 40 15,000 gallons	Welded steel tank, constructed in 1985; concrete dike secondary containment; insulated On concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4401 Utility 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment Last painted unknown; top course eastside contains approx. three square feet of coating breakdown with rusting of the substrate On concrete pad; potential releases to subsurface through tank bottom	Coatings Survey Report, 1/5/96 by Vass RETEC Visit 1/6/97
	B-5	Tank 4402 ATF Type F 15,000 gallons	Welded steel tank constructed in 1985, concrete dike secondary containment On concrete pad, staining on pad and valves to pipeline (Photograph No. 101); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-5	Tank 4403 Super IOW-40 15,000 gallons	Welded steel tank, constructed in 1985; concrete dike secondary containment On concrete pad, staining on pad; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4404 Utility 15,000 gallons	Welded steel tank, constructed in 1985; concrete dike secondary containment On concrete pad, staining on pad (Photograph No. 102); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999
	B-5	Tank 4405 Lubrizol 5191A 15,000 gallons	Welded steel tank, constructed in 1987; concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on pad and valves; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97

Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-LOW (continued)	B-5	Tank 4406 HiTec 7729 15,000 gallons	Welded steel tank constructed in 1987, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on pad and valves; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4407 Anglamol 6084A 15,000 gallons	Welded steel tank constructed in 1987, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on pad and valves; potential releases to subsurface through tank bottom	RETEC Visit 1/6/97
	B-5	Tank 4408 ECA 4537 15,000 gallons	Welded steel tank constructed in 1987, concrete dike secondary containment; insulated Corrugated steel tank on concrete pad, staining on pad and valves (Photograph No. 103); potential releases to subsurface through tank bottom	RETEC Visit 1/6/97; ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-WH	B-4 to C-5	Lube Manufacturing and Packaging Warehouse	Grates in concrete floor collect spills which are pumped to the 5,000 gallon underground flush tank outside the warehouse; the 5 gallon and 1 gallon bucket filler are underlain by a concrete vault which goes to the sump; old floor drains exist but it is unknown where they go to; potential releases to subsurface	RETEC Visit, 1997
FCANPLT	B-4, B-5	Former Drum Platform/ Canning Plant	A former warehouse/drum platform/canning plant was located in the south/southwest part of the contemporary warehouse; the warehouse (including an inside drum platform and canning plant) was evident in a circa 1910 photograph; the warehouse was razed by 1974	M/B&A, 1997
FBARFILL	B-5	Former Lube Oil Barrel Fillers	The 1931 and 1940 terminal drawings depicted lube oil barrel fillers at the south side of the former warehouse	
FGAR1	C-4, C-5	Former Garage	A former garage and pump houses were noted in a circa 1910 photograph; seven storage tanks were observed west/northwest from the structure in 1910; the structures were replaced between 1973 and 1974 by the contemporary warehouse	
FPHSE1	C-4	Fr Pumphouse 1		
FPHSE2	C-5	Fr Pumphouse 2		
FBOIL	C-5	Former Boiler House	The former Boiler House was observed in the circa 1910 photograph; it was removed by 1941; three tanks were erected to the west by 1955; they were removed by 1974	
FCOOP	C-5	Former Cooper Shop	The former Cooper shop was situated south/southeast from the barrel fillers, the warehouse extended southeastward over it between 1952 and 1955	
FBLACK	C-5	Fmr. Blacksmith	Former Blacksmith Shop was located north of former Boiler House On 8/7/93, 40 gallon release of Guardal 15/40 to ground; recovered by portable suction trailer On 2/12/96, lube oil additive supply hose burst spraying lubrizol 5704 in the lube oil blending area; approximately 3 gallons spilled onto the blending loops and the sump area under the equipment	Accident/Incident Report, 8/7/93 Incident Report, 2/12/96

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-WH (continued)	C-5	Tank 4338 HiTec 2S39 15,000 gallons	Welded steel tank constructed in 1985; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4339 Lubrizol 4702 1,000 gallons	Welded steel tank constructed in 1974; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4340 Lubrizol 9692 1,000 gallons	Welded steel tank constructed in 1974; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4341 Acryloid 154/70 1,000 gallons	Welded steel tank constructed in 1974; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4342 Acryloid 154/70 1,000 gallons	Welded steel tank constructed in 1974; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4343 Amoco 158 1,000 gallons	Welded steel tank constructed in 1974; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4344 Priolene 6910 1,000 gallons	Welded steel tank constructed in 1974; concrete dike secondary containment; Located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4345 Oloa 1232A 1,000 gallons	Insulated; welded steel tank constructed in 1974; concrete dike secondary containment; located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LUBE-WH (continued)	C-5	Tank 4346 Lubrizol 9990A 1,000 gallons	Insulated; welded steel tank constructed in 1974; concrete dike secondary containment; located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank 4347 Acryloid HF833 1,000 gallons	Insulated; welded steel tank constructed in 1974; concrete dike secondary containment; located in warehouse; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank F-8 Slurry 1,050 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
	C-5	Tank F-9 Mobilad G305 2,772 gallons	Welded steel tank constructed in 1954, concrete dike secondary containment; potential releases to warehouse floor through tank bottom	RETEC Visit 1/6/97
FMR-FOAM	C-5	Former foamite tanks	Two former foamite tanks were located southeast from the former garage	M/B&A, 1997
FUST-1	B-6	Former Underground Storage Tank 1669	Located South of the Upper Lube Cell; removed in 1985; no record of clean closure Tank overfill resulted in release of 310 gallons of RR-40 on 9/10/81 Potential releases to subsurface from spills and/or integrity failure	Rptd Spills at Unocal 1/75-9/93 file TM-0608
UST-2	B-7	Underground Storage Tank	Located ~40' east of F-tank farm next to UST-3; 1,000-gallon capacity; contains gasoline A flow signature extended to the north in the 1984, 1990, and 1991 aerial photographs Potential releases to subsurface from spills and/or integrity failure	RETEC Visit 1/6/97 M/B&A, 1997
UST-3	B-7	Underground Storage Tank	Located ~40' east of F-tank farm next to UST-2; 10,000-gallon capacity; contains diesel A flow signature extended to the north in the 1984, 1990, and 1991 aerial photographs Potential releases to subsurface from spills and/or integrity failure	RETEC Visit 1/6/97 M/B&A, 1997

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
UST-4	C-6	Underground Storage Tank	Located under Lab; 5,000-gallon capacity; contains dirty oil; installed in 1984, constructed of steel UST overfill of 127 gallons of RRA-40 on 6/22/82 On 6/8/93, there was a 350 gallon release of diesel onto concrete slab and into drain to the process separator; Total of 50 gallons of 90 neutral released onto a blacktop and cement area due to overfill; spill was contained and cleaned up with absorbent material Overfill of tank released 12 gallons of oil; spill contained on concrete pad and cleaned up with absorbent pads Potential releases to subsurface from spills and/or integrity failure	EPA Table of USTs at Portland Facility, 9/8/89 Rptd. Spills 1/75-9/93 Accident/Incident Report, 6/8/93 Incident Report, 9/4/92  Incident Report, 7/31/92
UST-5	C-6	Underground Storage Tank	Located under lab; 5,000-gallon capacity; contains clean oil and/or dirty oil; installed in 1984, constructed of steel Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland
UST-6	D-3	Underground Storage Tank	Located near southeast corner of TF#1; 550-gallon capacity; contains retain; installed in 1983, constructed of steel Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland
UST-7	D-3	Underground Storage Tank	Located near southeast corner of TF#1; 550-gallon capacity; contains retain; installed in 1983, constructed of steel Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland
UST-8	D-3	Underground Storage Tank	Located north of the truck loading rack; 550-gallon capacity; contains diesel additive; installed in 1983, constructed of steel Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland
UST-9	F-3	Underground Storage Tank	Located under the garage; 650-gallon capacity; contains slop oil; installed in 1983 or 1986, constructed of steel Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland
FUST-10	G-4	Former Underground Storage Tank	Located behind maintenance in the garage; 675-gallon slop oil tank; Removed approximately 1990; installed in 1983; constructed of steel, contains used oil Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland
FUST-11	C-6	Former Underground Storage Tank	Located north of the boiler house; 10,000-gallon capacity; abandoned in place; installed in 1972 constructed of steel; diesel Potential releases to subsurface from spills and/or integrity failure	9/8/89 U.S. EPA Table of USTs at Portland

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
P-1A	D-5	Pumps	Concrete pump pad next to Tank 2784 has staining on concrete and drains; piping network next to Tank 2784 has staining on concrete; pump pad near 2783 saturated with product and gravel around it was saturated (Photograph Nos. 25-27); potential and unreported releases of hazardous constituents to ground surface and/or subsurface Soil sample (GP-22) collected at 13 feet below grade on 9/18/97: TPH-D = 11,600 mg/kg, TPH-G = 198 mg/kg, TPH-HO = 6,690 mg/kg	RETEC Visit 1/6/97; ThermoRetec, 1999  ThermoRetec, 1999
P-2A	G-4	Pumps	Concrete pump pad between TK-3412 and TK-3413 was stained; potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97
P-1B	D-4	Pumps	Pump pad between TK-2669 and TK-36; staining on concrete, on pumps, no cracks (Photograph No. 8); Black oil blender area on concrete pad has staining and drips; potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97; ThermoRetec, 1999
P-1C	C-5	Pumps	Minor staining on pump pad between Tanks 2579 and 1471; potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97
P-2B	G-4	Pumps	Concrete pump pad between TK-2982 and TK-2983 has staining on valves and pumps and concrete pad (Photograph Nos. 39-41); potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97; ThermoRetec, 1999
P-3A	D-7	Pumps	Concrete pump pad next to Tank 3579 has visible product, no cracks; potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97
PUMP-UP	B-6	Upper Lube Cell Pumps	Staining on concrete; no visible cracks; staining on piping; potential releases to subsurface and/or ground surface; potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97
PUMP-LOW	B-5	Lower Lube Cell Pumps	Staining on concrete; no visible cracks; staining on piping; potential releases to subsurface and/or ground surface; potential and unreported releases of hazardous constituents to ground surface and/or subsurface	RETEC Visit 1/6/97



## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
OWS-001	C-7	Oil Water Separator #001	The separator was constructed by 1969; an excavation contiguous to the separator was noted in 1974 (possible extension of the separator); discoloration, possible liquid was evident north/northeast from the stormwater separator in 1980 aerial photographs Located in the industrial fuel oils tank farm just south of the former asphalt process area; potential releases to subsurface from overflows and/or integrity failure Soil Sample (HA-18) collected at 6 feet below grade on 9/19/97: TPH-D = 3,700 mg/kg, TPH-G = 154 mg/kg, TPH-HO = 57.5 mg/kg	M/B&A, 1997  RETEC Visit 1/6/97  ThermoRetec, 1999
OWS-002	D-4	Oil Water Separator #002	Located in the diesel and black oil tank farm; potential releases to subsurface from overflows and/or integrity failure Soil sample (GP-19) collected at 10 feet below grade on 9/18/97: TPH-D = 21,500 mg/kg, TPH-G = 648 mg/kg	RETEC Visit 1/6/97  ThermoRetec, 1999
OWS-003	E-5	Oil Water Separator #003	The final box sump was first evident in 1975 photographs; the Process Water Separator No. 003 was installed at the same time 5,000 gallons of gasoline spilled into the API separator and was removed with a vacuum truck Located in the diesel and black oil tank farm; potential releases to subsurface from overflows and/or integrity failure; full of product/water mix; TPH probe in separator Soil samples (GP-23) collected at 7.5 feet and 10 feet below grade on 9/18/97: (7.5-foot sample) TPH-D = 7,300 mg/kg, TPH-G = 1,300 mg/kg; (10-foot sample) TPH-D = 6,810 mg/kg, TPH-G = 965 mg/kg	M/B&A, 1997  10/28/94 Incident Report RETEC Visit 1/6/97  ThermoRetec, 1999
OWS-004	H-4	Oil Water Separator #004	Located in the gasoline tank farm; potential releases to subsurface from overflows and/or integrity failure PID = 15.7 ppm and 9.7 ppm at 7 and 9 feet below grade, respectively	RETEC Visit 1/6/97  ThermoRetec, 1999

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
ROUTF	K-3	River Outfall	Light-toned point discharges to the river were noted in 1940, 1952, 1964, 1966, 1967, 1969, and 1971; the reflectance of the discharges was a result of a high suspended solids load and/or from the rolling of sediments in the river; the 1966 discharge was particularly milky in appearance and may have been the result of a foreign substance; In 1972, a box or pipe was added at the discharge point; from 1974 onward, various floating booms surrounded the discharge point and much of the river bank north from the Unocal wharf; the new sewer discharge outfall was added circa 1976; thereafter, it was not clear whether or not the old outfall continued to be used; however, between 1986 and 1990, the bank was regraded in the vicinity of the old outfall; petroleum seeps may have continued in the vicinity, because floating booms were maintained along the entire bank through the 1996 photograph date; booms extended along the entire Unocal waterfront in the 1977 aerial photograph; Approximately 20 to 30 gallons of black oil observed on river outfall; booms contained it	M/B&A, 1997  10/29/92 Prelim. Notif. Incident Rpt.
DSA	D-4	Drum Storage	Drum storage area located next to Tank 4369, drums stacked on concrete pad and within a fenced area; potential releases of hazardous constituents due to storage and/or handling	RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LRACK	E-4	Truck Loading Rack (includes Fmr Tanks 589, 590, 1471, 1472, 1902, and 1989)	Rebuilt in 1979-1980; loads gas, diesel and ethanol; no cracks in concrete, minor staining; potential releases of hazardous constituents to ground surface Two aboveground rectangular Tank Nos. 1902 and 1989, were depicted on a 1940 terminal drawing; the tanks were noted as containing stove oil on a 1950 Sanborn Map; The contemporary truck loading rack was constructed pre-1951; a new canopy and asphalt paving were noted in 1980; Discoloration west from the rack was observed (1963, 1964, and 1966); a residual stain was noted in 1969 On 4/15/88, 1,300 gallons of diesel leaked from the loading rack and was fully contained	RETEC Visit 1/6/97 M/B&A, 1997  6/15/93 PA
FLRCK2	C-3, D-3	Former Truck Load Rack No. 2	The former truck loading rack No. 2 was evident in the 1951 photographs and was removed by 1980; Stains and possible flow extended west from the rack (1956, 1963, 1964, 1966, and 1972); An open pit and a pile of dirt were located north from the rack (1974) On 3/25/85, 246 gallons of leaded gasoline spilled and was contained in an underground spill containment tank On 12/15/95, 200 gallon gasoline spill due to a mechanical malfunction was contained in emergency overflow tank During unloading, 10 gallons of 100 neutral oil was released onto the concrete pad beneath the tank car where it was cleaned up During loading, 3.5 gallons of 7EP gear lube was released; it was recovered and wiped up with absorbent pads 83 gallon spill of unleaded gasoline due to overfilling of truck 72 gallons of unleaded spilled during loading due to truck overfill 10 gallons of gearlube spilled onto the asphalt pavement; contained with absorbent pads 10 gallon spill onto concrete pad 40 gallons of diesel spilled & captured in drain to the separator 100 gallons of diesel entered the diesel knock-down tank and an additional 100 gallons was washed down the rack drain; no product escaped the racks concrete catchment system 10 gallons of guardol 15/40 to released to separator drain during loading	11/25/96 Incident Letter Schneiders to DeBerry  Incident Report, 6/23/92  Incident Report, 12/30/92 5/6/91 Incident Report 4/26/90 Incident Report 3/23/90 Incident Report  9/13/90 Incident Report 5/18/89 Incident Report Incident Report, 4/15/88  11/1/88 Incident Report

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
T-LOADING	C-4	Truck Loading Rack	Truck Loading Rack from the Luhe Warehouse; potential releases of hazardous constituents to ground surface	RETEC Visit 1/6/97
FRORCK	C-4	Former Road Oil Load Rack	Former road oil load rack was sketched on a 1940 terminal drawing, it had been removed by 1952	M/B&A, 1997
FLRCK1	C-3	Former Truck Load Rack No. 1 (Area also includes seven former tanks)	Former truck loading rack No. 1 was located north/northwest from the former warehouse, a discoloration from a possible release was observed east from the rack (1939), the rack was dismantled by 1951 Historical aerial photographs indicate seven former aboveground storage tanks were present in this area Photograph Nos. 42-44 - staining and product on pump slab; product in concrete-lined trench of central area	ThermoRetec, 1999
UNLOAD	F-3	Truck Unloading Rack	Discoloration and flow signatures in the vicinity of the unloading area were observed in 1964, 1966, 1971, and 1972; stains were evident in 1980 and 1990 Truck Unloading Rack; potential releases of hazardous constituents to ground surface	M/B&A, 1997 RETEC Visit 1/6/97
LOAD-BO	D-6	Black Oil Truck Loading Rack	Truck Loading Rack for black oil; this loading rack was observed in 1990; potential releases of hazardous constituents to ground surface; a layer (several inches thick) of hydrocarbon residues was located in a concrete-lined pit at the Black Oil Truck Loading Rack; canopy-covered rack was first noted in 1974	RETEC Visit 1/6/97; M/B&A Visit 1/21/97; M/B&A, 1997
FASRCK	D-6	Former Asphalt Loading Rack	Historical aerial photograph indicated that the former asphalt loading rack was in this location	

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LOAD-LUBE	D-6	Lube Loading Rack	<p>The lube oil loading rack or predecessor was evident in the 1955 aerial photographs; A 1969 Sanborn Map depicted a filling stem at this location; discoloration was observed southwest and northeast from the rack in the 1969 photographs; a liquid flow was noted northeast from the rack (1972); stains on the pavement were observed in the vicinity of the rack (1974 and 1980)</p> <p>A second rack was depicted north/northeast from the rack in the 1957 drawing, it was confirmed in a 1977 aerial photograph; Localized stains were observed in the vicinity of the rack (1990)</p> <p>Staining on concrete by lube slop tank and diesel slop tank; piping and pump near asphalt slab drain valve is stained on concrete, approx. 22 drums of diesel slop are stored in a staging area; no cracks, some staining at lube loading rack (Photograph No. 46); potential releases of hazardous constituents to ground surface</p>	<p>M/B&amp;A, 1997</p> <p>RETEC Visit 1/6/97; ThermoRetec, 1999</p>
UNLOAD-LUBE	D-6	Lube Unloading Rack	<p>Some cracks, staining, approximately 50 drums stored; potential releases of hazardous constituents to ground surface; An overhead pipeway was noted terminating in the vicinity of the future loading rack in 1955; discolored soil was noted northwest from the pipeway terminus in 1963; the overhead pipeway was removed, and a canopy-covered rack was observed in 1969; extensive liquid flows to the west/northwest were observed in 1970, 1971, and 1972; a flow appeared to extend north, downslope into the containment area for Tank Nos. 2783 and 2561; it terminated in the vicinity of the future final box sump; discoloration and staining were observed north/northwest from the rack in 1974; an active flow to the west/northwest from the north side of the rack was evident in 1975 and 1976; liquid flow north/northwest from the rack was evident in 1980 and 8/6/86; the canopy was removed by 1990</p>	<p>RETEC Visit 1/6/97; M/B&amp;A, 1997</p>
FEASRCK	D-6	Fmr Emul. Asphalt Load Rack	<p>Historical aerial photographs indicate that the former emulsified asphalt loading rack was in this location and adjacent to the asphalt loading rack</p>	

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
SS-OLD	J-3	Old Doane Ave Storm Sewer	<p>A 27-inch wood stave storm sewer had been impacted by hydrocarbons via groundwater filtration since at least the early 1970s; the storm sewer was found to have cracks and deteriorated joints which allowed hydrocarbon and groundwater infiltration; the leaks to the storm sewer created hydrocarbon discharges at the outfall at the Willamette River</p> <p>Hydrocarbon leakage first reported in 1974; the old Doane Ave. storm drain continued to be a location of hydrocarbon seepage from 1974 -1982 and again in 1988</p> <p>Oil spill of unknown quantity infiltrated into Doane Street storm sewer from private sewer line closest to manhole near loading rack; sewer line leak was repaired on 2/10/75</p> <p>On 8/19/96, Doane Ave storm sewer was inspected at manhole 2, in the tank farm; it was brick lined and contained water and a layer of mud coating the base with some hydrocarbons present in the mud material; sheen on the water released from behind the gate valve indicate that some product is present in this section of line</p> <p>Between 1974 and 1978, more than 9,000 gallons of petroleum product were recovered from Old Doane Ave. Storm sewer</p>	<p>Draft Preliminary Assessment, SECOR, Tualatin, Oregon, 6/15/93</p> <p>Draft Interim Action Work Plan, CH<sub>2</sub>M Hill, 11/1994</p> <p>Table of Reported Spills 1/759/93, file TM-0608</p> <p>Letter to J. Comstock from CH<sub>2</sub>M Hill, 8/30/96</p> <p>Draft Prelim Assess, SECOR, 6/15/93</p>
SS-NEW	I-4	New 60-inch Doane Ave Storm Sewer	<p>A seep was observed in 1984 at the riverbank beneath the invert of the new 60-inch storm drain; the backfill provided a pathway for the product migration; in 1987, a clay barrier and 12-inch product recovery well (RES-New) were installed within the trench backfill to mitigate new product seeps; a bentonite barrier wall (13' wide x 4' thick x 8' high) was constructed by removing fill from the trench, the barrier was keyed into the native silt 5' below the pipe bottom</p> <p>In 1988, 3,210 gallons of product were recovered from the clay barrier and water depression/product recovery well</p> <p>In 1992, 6.4 gallons were recovered, corresponding to a decrease in recoverable hydrocarbons present</p> <p>Sample collected from the surface of the Willamette River at the outfall location on 10/20/94 contained No. 2 diesel-type hydrocarbons; potential and unreported releases of hazardous constituents and/or integrity failure</p>	<p>Draft Interim Action Work Plan, CH<sub>2</sub>M Hill, 11/1994</p> <p>12/20/88, Annual Progress Report, Riedel</p> <p>1992 Final Report, Riedel, 12/12/93</p> <p>10/27/94 Letter to J. Comstock from T. Fisk</p>

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
FMR- ASPHALT	C-6	Former Asphalt Plant	Built approximately 1972, dismantled in 1984; probable releases of hazardous constituents from past operations Construction of the Asphalt plant began c. 1968; it was completed by 1969 (based on available aerial photographs); it was partially dismantled by 1990; asphalt pipes and a heating apparatus were observed during the 1/21/97 site inspection	RETEC Visit 1/6/97 M/B&A, 1997
BOOM	I-5	Boom Containmt Area	Between 1974 and 1978, 9,000 gallons of petroleum product were recovered from this area	Dft. Prelim. Assessment, SECOR, 6/15/93;
DOCK	M-4	UNOCAL Dock Area	Light sheens were visible along the shore of the Unocal and Chevron docks in 1982; Gasoline spill of 1 gallon; oil spill of 1 pint; diesel spill of 1/2 gallon Hydrocarbon discharge to the river immediately downstream from the Unocal Dock was reported in Jan 1982; booms installed; Old Holbrook Slough Interceptor Trench installed in 1988 along the beachline between Unocal's and Chevrons loading docks; 2,000 gallons of diesel spilled at the dock on 7/19/82, boom deployed Unknown quantity of oil spilled into Willamette river, containment tanks flooded - oil spilled over on 12/7/84; booms deployed BTX concentrations in wells in the riverfront dock area from 1995/1996: B-4 (FPLH), B-17 (B = 830 ppb, T = 36 ppb, E = 16 ppb, X = 43 ppb), B-18 (X = 0.6 ppb), B-22 (FPLH), B-35 (FPLH), B-36 (B = 480 ppb, T = 8.9 ppb, E = 8.2 ppb, X = 9.6 ppb), B-37 (FPLH) On 2/19/94, spill of approx. 1 pint of oil into bay, contained with absorbent pads, and containment boom Spill of 2 gallons of cutter stock into bay; absorbent pads and booms deployed On 9/4/93, approximately 80 gallons of unleaded spilled into the bay from an undetermined source; Unocal not responsible, spill origin undetermined Product backed up in the seepage containment project and 5 gallons seeped into the Willamette River Sheen observed under Unocal dock 2 gallons of diesel sprayed out onto the pier; diesel was contained on dock catchment system Approximately 0.5 gallon release of diesel No. 2 into the river 7 gallon release of diesel No. 2; 5 gallons to the river, absorbent pads were deployed	DEQ Spill Reports; Dft. Prelim. Assess., 6/15/93 Willbridge Site Annual Progress Report, Riedel, 12/20/88 Rptd. Spills at Unocal 1/75-9/93, file TM-0608 Technical Memo #3b to J. Comstock from Bruce Brody-Heine, CH <sub>2</sub> M Hill, 12/6/96 2/19/94 Accident/ Incident Report Acc./Inc. Rpt., 6/20/94 Accident Report, 9/8/93 Incident Report, 8/7/92 Prelim. Inc. Rpt 2/6/92 Incident Rpt, 12/11/91 Incident Rpt, 7/4/90

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
DOCK (continued)	M-4 (continued)	Unocal Dock Area	Drains go to tank underneath the dock which are pumped into the stormwater system to separator 003; the underdock storage tank is a 2,050-gallon tank Yellow floating booms were present in the water on either side of the Unocal wharf	Incident Rpt., 10/10/90; RETEC Visit 1/6/97 M/R&A Visit 1/21/97
FOGWHSE	I-3, J-3	Former Oil & Grease Warehouse	A circa 1925 oblique photo indicated that a wharf was not associated with the terminal; the oil and grease warehouse was identified on the 1931 terminal drawing; the wharf and warehouse were confirmed in the circa 1936 photos	Draft Interim Action Work Plan, CH <sub>2</sub> M Hill, 11/1994
FYARD	J-3	Fmr Laydown Yd	A former laydown yard was also identified on historical aerial photographs	
PRWS	Not Shown	Process Water System	On 10/18/96, a total of 60 gallons of ethanol was released into the process water system when an air eliminator at pump G-159 failed; no indications that the release reached OWS 003 or that any of the ethanol/water mixture was discharged to the POTW Photograph No. 30—staining by sump/circular pad	Incident Report, 10/18/96  ThermoRetec, 1999
BOILER	C-6	Boiler House	Two boilers, fired by natural gas	RETEC Visit 1/6/97
GARAGE	F-4	Maintenance Garage	Discontinued maintaining fleet of trucks in 1994, store lube in this garage for maintenance purposes; three drains tie into catch basin; to underground slop tank; some cracks in pavement floor; one other drain in floor which is now blocked off; potential releases of hazardous constituents through drains	RETEC Visit 1/6/97
FGAR2 FMACH	F-3 F-4	Former Garage 2 Former Machine Shop	The garage building and former shops (maintenance/machine and repair) were evident in the 1936 photographs; the building was expanded to the northwest between 1941 and 1947; it was modified (downsized) to its present-day configuration between 1984 and 1986	M/R&A, 1997
UNPIPE	Not Shown	Underground piping	Failed gasket leaked 5 gal ethanol onto ground; approx 25 gal of soil were impacted On 10/27/94, unleaded gasoline release from a valve on a product pipeline of 8,700 gallons; the product was contained in the containment system and recovered from the oil/water separator; on 6/11/85, 3,000 gallons of fuel oil were released from a pipeline beneath Front Avenue due to a leak at a broken flange gasket, a 10-inch pipeline from TK-3579; on 7/19/82, a product line cracked during annual pressure testing releasing 800 gallons; potential and unreported releases of hazardous constituents and/or integrity failure	Incident Report, 10/6/95 Follow-up Report as Required by SARA Title III, 11/7/94



## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
FMR-RAIL	B-4	Former Railroad Loading/Unloading Rack	Former railroad loading/unloading rack was located west from and adjacent to the former warehouse; three spur tracks from the Burlington Northern Railroad entered the Terminal from the northwest; the tracks originally terminated northwest from the Lower Lube Cell; surface discoloration was observed along the tracks on various photographs; they were removed when the new warehouse was constructed between 1973 and 1974	M/B&A, 1997
RAILROAD	B-7	Railroad Car Loading Area	Drips from rail car valves observed on ties and gravel; potential creosote contamination from preserved ties and/or releases of hazardous constituents from railcar transportation, maintenance or cleaning; the gravel was hydrocarbon-stained in and around the Railroad Loading/Unloading Racks On 2/17/89, 10 gallons of Super RR-E 40 leaked in the loading area and was contained in the catchment system On 9/30/91, 200 gallons of TLA555 released onto concrete catchment basin and cleaned up On 3/8/93, 2,955 gallons of Unocal Ramar 20W-40 release On 1/24/94 approximately 527 gallons of Ramar blend were released onto the concrete slab and into the catch basin system where it was contained, recovered, and put into the slops tank Photograph Nos. 75-78 - product on railroad ties; drippage and staining on tracks; PID = 20 ppm at 3.0 feet below grade	RETEC Visit 1/6/97; M/B&A Visit 1/21/97  Incident Report, 2/17/89  Incident Report, 9/30/91  Incident Report, 3/8/93 Incident Investigation Report, 1/24/94  ThermoRetec, 1999
FSHED	B-7	Former Shed	A shed-like structure and spur track were observed from 1948 to circa 1972; soil around the shed was discolored	M/B&A, 1997

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

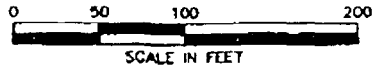
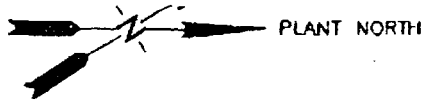
Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
LAND-1	B-8	Open Land Area (South Yard)	This largely unpaved area, located south/southeast from the boiler house, bordered by the railroad tracks (west), storage tanks (east/northeast) and the property line (south/southeast) appeared to have several functions: scrap yard, drum storage and possible cleaning, truck/trailer parking, and vehicle fueling; A mound of black material was observed in the general location of Tank No. 4253 (pre-development) in the 1955 aerial photographs; A trailer-type structure was noted in 1956; From circa 1936 to circa 1940, drum storage was limited to an area between and including parts of future Upper Lube cell and the future boiler house	M/B&A, 1997
FDRUM	B-9	Former Drum Storage	Drum storage and possible cleaning were observed in the photographs circa 1951 to 1974 (generally southeast from the contemporary railroad racks); discolored soil and wet flows were evident in 1946, 1954, 1964, 1966, 1969, 1970	
FPIT	B-8	Former Disposal/Seepage Pit	A possible disposal pit was observed in the southeast end of the drum storage area in 1972 and 1973, which also was a stockpile area for soil; discolored/wetted soil was evident throughout the southern end of the yard (1961, 1963, 1967 and 1970); fill material was evident in the southeast corner of the yard in 1971; hydrocarbon stains to soil were observed in and around stacked drums at the southeast end of the yard in 1972	
ETH	C-7	Ethanol Pit	The ethanol pit was constructed by 1994 Potential release of hazardous constituents to ground and/or subsurface	M/B&A, 1997 RETEC Visit 1/6/97

## Environmental Baseline Assessment Areas of Concern for the Portland Terminal (Continued)

Map Symbol	Map Location	Area of Concern	Basis of Concern	Reference
	G-6 F-8 to G-9	Off-Site Asphalt Operations and Structures	A former Unocal auto Repair Shop and Office were located east of the Tank Farm No. 2 as shown on the 1950 and 1969 Sanborn maps; located to the north of Tank Farm No. 3 was a former California Asphalt Corporation Oil Refinery (1950 Sanborn map); designated as a American Bitumuls & Asphalt Company Oil Refinery on a 1960 Sanborn map which subsequently became a Unocal Asphalt Plant; this facility was reportedly sold to Chevron in the 1980s	M/B&A, 1997

## NOTE:

1. Analytical methods used for the RETEC Phase II Environmental Assessment (1998):
  - Gasoline-range hydrocarbons (TPH-G) for a carbon range of C6 to C10 by Oregon DEQ Method TPH-G
  - Diesel-range hydrocarbons (TPH-D) for a carbon range of C10 to C28 by Oregon DEQ Method TPH-D
  - Heavy oil-range hydrocarbons (TPH-HO) for a carbon range of C28 to C40 by Oregon DEQ Method TPH-D (modified)
  - Quantification of BTEX and MTBE were determined by EPA Method 8020A
  - Seven Soil Samples were analyzed for volatile compounds by EPA Method 8260A
  - Five Soil Samples were analyzed for TPH-G by EPA Method 8015 and for BTEX and MTBE by method 8020A



### LEGEND

- AREA OF CONCERN
- FORMER FEATURE
- B-1 EXISTING MONITORING WELL LOCATION
- PROPOSED MONITORING WELL LOCATION
- RES-0 EXISTING RECOVERY WELL LOCATION
- GP-9 SOIL PROBE SUBSURFACE SOIL OR SOIL AND SOIL GAS LOCATION
- SG-1 SOIL GAS SAMPLING LOCATION
- HA-2 HAND AUGER BORING LOCATION

SE II FACILITY MAP  
PORTLAND TERMINAL

# RETEC

REMEDIATION  
TECHNOLOGIES INC

DRAWING NO.

FIGURE 2-3

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